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ABSTRACT

This is a checklist for use by science coordinators, school principals, science supervisors, and teachers in identifying strengths and weaknesses of science programs in grades kindergarten through 12. It can also be used by science coordinators during school visits. This guide contains space for recording information concerning: school name and country; visitation date(s) and number; purpose(s) of visit; name(s) of individual(s) with whom briefing was held and recommendations; teachers, specialists, and administrators visited; observations of science program management; science budget; library and media center; computer program in science; science curriculum guides; schoolwide action plan; teaching staff; adopted textbooks; science and teacher inservice programs; science courses; North Central Association evaluation; school improvement plan; standardized testing program; general observations and recommendations; and name of person with whom briefing was held. To aid the user, a list of references cited in context is provided in the appendix. These supporting documents include: (1) a memorandum on quality program indicators; (2) an administrator's guide; (3) science objectives; (4) approved textbook listing; (5) 7-12 sequential learning guide; (6) graduation requirements; (7) standards for secondary schools; (8) K-6 learning and time allocation guide; (9) applicant evaluation guide; (10) middle school standards; (11) elementary school standards; and (12) schoolwide action plan instructions. (CW)

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DEPARTMENT OF DEFENSE DEPENDENT SCHOOLS PACIFIC

UNIT SCHOOL
SCIENCE EDUCATION PROGRAM
EVALUATION GUIDE

SY88-89

U.S. DEPARTMENT OF EDUCATION
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LIST OF SUPPORTING DOCUMENTS

01. ETG/635-3001/303-5 Memorandum Quality Program Indicators, of 87MAR23.

02. DS Manual 2005.1, Administrators' Guide, section 402, of 88FEB.

03. DS Manual 2200.1, Science Objectives for 1985-1992.

04. ERH/635-2267/303-11 Memorandum Approved Textbook Listing, of 87AUG11.

05. 7-12 Sequential Learning Guide DSPA Manual 2000.9.

06. ERC/635-2151/308 Memorandum, Course Titles and Student Information System (SIMS) Computer Codes, of 87APR17.

07. The DoDDS Educator Applicant Evaluation Guide School Year 1988-1989.

08. DoDDS-P/Director Memorandum, Definition of Laboratory Science Courses and Science Laboratory Sessions, of 87OCT07.

09. DS Manual 2000.8, K-6 Learning and Time Allocation Guide, of 85DEC.

10. NCA Standards For Middle Level Schools (inservice); NCA Standards For Elementary Schools (inservice).

11. DSPA Regulation 2300.1, Department of Defense Dependent Schools Pacific Region, School-Wide Action Plan (SWAP) Policy, of 88MAY31.

SCHOOL AND COUNTRY

____

VISITATION DATE/S AND NUMBER

____

PURPOSE/S OF THE VISIT

1. ____

____

2. ____

____

3. ____

____

IN BRIEFING

1. Name/s of individual/s with whom the briefing was held: ____________________

____

2. Quality Program Indicators (ETG/635-3001/303-5 Memorandum of 87MAR23) identified by the school administrator as those upon which he or she would like the evaluation to focus:

   a. ____

   ____

   b. ____

   ____

   c. ____

   ____

   d. ____

(05)______________________________

____

(06)______________________________

____

d. Notes:

(01)______________________________

____

(02)______________________________

____

TEACHERS. SPECIALISTS AND ADMINISTRATORS VISITED

1. NAMES/RESPONSIBILITIES

a.____________________
b.____________________
c.____________________
d.____________________
e.____________________
f.____________________
g.____________________
h.____________________
i.____________________
j.____________________
k.____________________
l.____________________
m.____________________

NAMES/RESPONSIBILITIES

n.____________________
o.____________________
p.____________________
q.____________________
r.____________________
s.____________________
t.____________________
u.____________________
v.____________________
w.____________________
x.____________________
y.____________________
z.____________________

2. Notes:

a. ____________________

____

b. ____________________

____

c. ____________________

____

d. ____________________

____

e. ____________________

____

f. ____________________

____

3. Observations/Recommendations for Improvement:

a. ____________________

____

____

b. ____________________

____

____

c. ____________________

____

____

d. ____________________

____

____

e. ____

____

____

SCIENCE DEPARTMENT AND PROGRAM MANAGEMENT

1. General Observations: Yes/No¦Yes/No
K-6¦7-12

a. Program Administration.

(01) A science supervisor coordinates the science program. ___/___¦___/___

(02) A science supervisor has full administrative responsibility for the science program except teacher evaluation. ___/___¦___/___

(03) Supervision of the science program is done by regular school administrators. ___/___¦___/___

(04) Supervision of the science program is judged to be adequate. ___/___¦___/___

(05) Administrative support of the science program is adequate. ___/___¦___/___

b. Curriculum Coordination:

(01) There is vertical coordination in the program from grade to grade. ___/___¦___/___

(02) There is horizontal coordination among course sections at the same grade/course level. ___/___¦___/___

(03) Repetition in course content is limited from course-to-course except where it is planned. ___/___¦___/___

(04) Teachers have an opportunity to plan with other teachers;

(a) in the same course. ___/___¦___/___

(b) teaching different courses. ___/___¦___/___

c. Decision-making Process in the Science Program:

(01) Teachers have frequent opportunities for staff input on the science program. ___/__¦___/__

(02) Teachers have great independence in developing their science courses. ___/__¦___/__

(03) Teachers have few opportunities to influence the science program. ___/__¦___/__

2. Name of Department Chair:

3. Size of Department:

4. Frequency of Meetings:

5. Minutes of Meetings:

6. Notes:

   a.

   b.

7. Observations/Recommendations for Improvement:

   a.

   b.

SCIENCE BUDGET

(DS Manual 2005.1, *Administrators' Guide*, section 402):

1. Dollar Amount:

   a. Consumable Materials:

   b. Equipment:

(01) Replacement:

(02) New:

(03) Repair:

c. Library Materials:

d. Science Kits (Grades K-9)

e. Textbooks:

2. Name of Person Who Drafts the Budget:

3. Process Used When Drafting the Budget:

4. Yearly Budget Deadline as Set by the Administration:

5. Notes:

a.

b.

c.

6. Observations/Recommendations for Improvement:

a.

b.

c. ____________________

d. ____________________

LIBRARY AND MEDIA CENTER

1. General Adequacy: The presence of sufficient and appropiate science books, student periodicals, professional science teaching periodicals and science media programs to carry out the conditions of the curriculum are essential to a good science education program. All of these items should be matched as closely as possible with the science program objectives and teaching methods required by the curriculum. Versatility, intended use, the user, and application to student investigations must be considered in assessing the appropiateness of existing library and media center inventories to adequately support the science education program as well as new purchases in the area of science.

To assess the general adequacy of the science library and media center portion of the science program, all components that have been met in the list below should be checked.

FUNDAMENTAL

- ☐ Sufficient library books and media programs are available to support all activities and topics in the courses offered.
- ☐ An annual budget provides for the purchase of science books and media programs.

SUBSTANTIAL

- ☐ All necessary instructional resorces including audio visual resources related to the science curriculum are available in the media center.
- ☐ Equipment and library materials provided for in the curriculum plan are available to individuals or small

EXEMPLARY

- ☐ Full use is made of instructional media to supplement science learning in the classroom.
- ☐ Lists of science media programs held by the media center are available for teacher use.
- ☐ There is an on going program conducted by

	groups for use when conducting investigations.	media specialist and science department to evaluate the currency of science books and media programs.

2. Books:

a. Approximate number of science books held:____________________

b. Are the science books well distributed across all science areas?_____

____

3. Reference documents____

a. Professional periodicals in science areas:

(01) Number:____

(02) Names:

(a)____

(b)____

(c)____

(d)____

(e)____

(f)____

b. Student periodicals in science areas:

(01) Number:____

(02) Names:

(a)____

(b)____

(c)____

(d)____

(e)____

(f)____

4. Audio/Visual/Media Materials:

   a. Number of Programs:________________________________

   b. Distribution Across the Science Areas:________________________

   ____

5. Notes:

   a.____

   ____

   b.____

   ____

   c.____

   ____

6. Observations/Recommendations for Improvement:

   a.____

   ____

   ____

   b.____

   ____

   ____

   c.____

   ____

   ____

   d.____

   ____

   ____

COMPUTER PROGRAM IN SCIENCE

1. Software:

a. Number of science programs held by the school: ____________________

b. Is the software compatible with the computers? ____________________

____

c. Is the software well distributed across the science areas? __________

2. Apple IIGS Program:

a. Are Apple IIGS computers part of the science program? ______________

b. How many computers are used in the program? ____________________

c. Subjects in which the computers are used: ____________________

____

d. Ways in which the computer/s is/are used:

(01) ____

(02) ____

(03) ____

(04) ____

3. Notes:

a. ____

____

b. ____

____

c. ____

____

4. Observations/Recommendations for Improvement:

a. ____

____

b.

c.

d.

SCIENCE OBJECTIVES GUIDES

(DS Manual 2200.1, Science Objectives for 1985-1992)

1. Is a copy of the current guide available in the school office files?

2. Does each science teacher science have a copy of the most recent guide?

3. Are they used?

a. How?

b. When?

4. Notes:

a.

b.

c. ____

____

5. **Observations/Recommendations for Improvement:**

a. ____

____

____

b. ____

____

____

c. ____

____

____

d. ____

____

____

ADOPTED TEXTBOOKS

(Approved Textbook Listing ERH/635-2267/303-11 Memoarndum of 87AUG11)

1. Is the approved list of science textbooks available?____________________

2. Are the approved textbooks and laboratory manuals being used?____________

   a. K Addision-Wesley Science, 1984:____________________

   b. 1-6 HBJ Science, 1985:____________________

   c. Focus on Life Science, 1984:____________________

   d. Focus on Life Science: A Learning Strategy for the Laboratory:____________________

   e. Focus on Earth Science, 1984:____________________

   f. Focus on Earth Science: A Learning Strategy for the Laboratory:____________________

   g. Focus on Physical Science, 1984:____________________

   h. Focus on Physical Science: A Learning Strategy for the Laboratory:____________________

   i. Biology: Living Systems, 1983:____________________

   j. Biology: An Everyday Experience, 1981:____________________

   k. Probing Levels of Life: A Laboratory Manual:____________________

   l. Laboratory Biology: Investigating Living Systems:____________________

   m. Biology: Laboratory Experience:____________________

   n. Chemistry: A Modern Course, 1983:____________________

   o. Laboratory Chemistry:____________________

   p. Solving Problems in Chemistry:____________________

q. Modern Physics, 1984: ______

r. Modern Physics: Exercises and Experiences in Physics: ______

3. Does each science teacher have:

a. A teachers' edition of the approved text? ______

b. A teachers' edition of the lab manual? ______

c. A set of other publisher generated course support materials? ______

4. Notes:

a. ______

b. ______

c. ______

5. Observations/Recommendations for Improvement:

a. ______

b. ______

c. ______

d. ______

a. ______________________________

b. ______________________________

c. ______________________________

d. ______________________________

SCIENCE COURSES

1. Which of the following courses are offered?

a. Life Science: ____________

b. Earth Science: ____________

c. Physical Science: ____________

d. Biology: ____________

e. Chemistry: ____________

f. Physics: ____________

g. Advanced Biology: ____________

h. Advanced Chemistry: ____________

i. Advanced Physics: ____________

j. Science and Health 7: ____________

k. Science and Health 8: ____________

l. Astronomy: ____________

m. Physiology: ____________

n. Biochemistry: ____________

o. Oceanography: ____________

p. Others: ____________

2. Are the science courses being offered, on the approved list (ERC/635-2151/308 Memo of 87APR17, Course Titles and Student Information System

HIGH SCHOOL

SEQUENTIAL LEARNING GUIDE

(7-12 Sequential Learning Guide DSPA Manual 2000.9)

1. Is a copy of the guide available for use in the school office files?_____

2. Are guide wall charts posted where they can be used by:

   a. Administrators__________

   b. Teachers__________

   c. Students__________

   d. Parents__________

3. Does each science teacher have a copy of the guide?__________

4. Is there a relationship between information in the science section of the guide and content in the various science courses being offered?

5. Notes:

   a.__________

   b.__________

   c.__________

6. Observations/Recommendations for Improvement:

(SIMS) Computer Codes)?

3. Courses not on the approved list: Have science courses, not on the approved list, been approved by the Regional Office?

a. Are course objectives clearly identified?

b. Have course descriptions been written?

4. Have student centered enabling (sub-instructional) objectives been established for each science course?

5. Notes:

a.

b.

c.

6. Obeservations/Recommendations for Improvement:

a.

b.

c. ____

____

____

d. ____

____

____

SCIENCE TEACHING STAFF

1. General Adequacy. Competency to teach science requires a unique preparation and experience. To reach the optimum performance level, secondary teachers must go well beyond the minimum course work required for certification. They must become involved in professional organizations, read professional journals related to their field and stay abreast of contemporary curriculum recommendations. In addition, qualified science teachers must be able to work cooperatively within a hierarchy of responsibilities to provide a coordinated science program.

To assess the general adequacy of the science teaching faculty, all components that have been met in the list below should be checked.

FUNDAMENTAL

☐ All science teachers are certified to teach in the science areas to which they are assigned.

☐ All science teachers are familiar with existing major curriculum developments in their teaching areas.

☐ A majority of the science teachers regularly read one professional journal.

☐ All science teachers know appropiate safety practices for conducting laboratory activities at their grade level.

SUBSTANTIAL

☐ All science Teachers have a major in the area they are teaching and and have credits in at least one other science to provide a broad background for understanding.

☐ A majority of the science teachers have attended at least one professional meeting in the past year.

☐ All science teachers can show evidence of having specifically studied major curriculum developments in their teaching area.

EXEMPLARY

☐ A majority of the science teachers have at least a Master's degree or its equivalent related to the area or areas they are teaching.

☐ All science teachers are active members of at least one professional organization and a majority have participated in the program of one professional meeting.

☐ All science teachers have directly participated in curriculum development, revision or adaptation projects that have been implementated in classroom teaching.

☐ Individual teachers have been designated as having specific leadership responsibilities in conducting the science program.

☐ A qualified individual is designated as coordinator of the science program with other staff members assigned to a hierarchy of teaching-leading responsibilities.

---

2. Are teachers prepared academically to teach the courses assigned to them (NCA Standards For Secondary Schools; The DoDDS Educator Applicant Evaluation Guide School Year 1987-1988) and if not where are the problems?

3. Notes:

a.

b.

c.

4. Observations/Recommendations for Improvement:

a.

b.

c.

d.

SCIENCE LABORATORIES

(DS Regulation 2000.1, Department of Defense Dependent Schools High School Graduation Requirements of September 4, 1984)

1. Inclusion:

a. Are labs part of every science course (DoDDS-P/Director Memorandum, Definition of Laboratory Science Courses and Science Laboratory Sessions, dated 07 Oct 1987)?

b. How frequently are labs conducted?

2. Equipment, Strengths and Shortfalls (For titles see Memo ERC/635-2151/308 of 87SEP17, Course Titles and Student Information Management System (SIMS) Computer Codes):

a. General Adequacy: The presence of sufficient and appropiate equipment to carry out the conditions of the curriculum is essential to a good science education program. All equipment must be matched as closely as possible with the science program objectives and teaching methods required by the curriculum. Versatility, intended use, the user, and application to student investigations must be considered in assessing the appropiateness of existing equipment inventories as well as new equipment purchases.

To assess the general adequacy of the science laboratory portion of the science program, all components that have been met in the list below should be checked.

FUNDAMENTAL	SUBSTANTIAL	EXEMPLARY
☐ Sufficient laboratory and demonstration equipment is available to conduct all activities	☐ Equipment required by the curriculum plan is available to individuals or small	☐ Versatile equipment is available to provide for open ended student investigations.

provided for in the textbook or course of study.

☐ An annual budget provides for equipment purchases and maintenance.

groups to conduct the laboratory phase of the program.

☐ All recommended safety equipment is available.

☐ Sophisticated equipment is provided for collecting and analyzing quantitative data.

☐ Specialized equipment is available to teachers and students for functions such as plant and animal care, culture incubation, radiation studies, analytical investigations and astronomical observations.

---

b. Courses:

(01) Life Science (grade 7): ____________________________

____

(02) Earth Science (grade 8): ____________________________

____

(03) Physical Science: ____________________________

____

(04) Biology: ____________________________

____

(05) Chemistry: ____________________________

____

(06) Physics: ____________________________

____

(07) Advanced Biology: ____________________________

____

(08) Advanced Chemistry: ____________________________

____

(09) Advanced Physics:

(10) Science and Health 7:

(11) Science and Health 8:

(12) Astronomy:

(13) Physiology:

(13) Biochemistry:

(14) Oceanography:

(15) Others:

3. Supplies:

a. General Adequacy: The presence of sufficient and appropiate supplies to carry out the conditions of the curriculum is essential to a good science education program. All supplies must be matched as closely as possible with the science program objectives and teaching methods required by the curriculum. Versatility, intended use, the user, and application to student investigations must be considered in assessing the appropiateness of existing supply inventories as well as new supply purchases.

To assess the general adequacy of the science laboratory portion of the science program, all components that have been met in the list below should be checked.

FUNDAMENTAL SUBSTANTIAL EXEMPLARY

☐ Sufficient laboratory and demonstration materials are available to conduct all activities provided for in the textbook or course of study.

☐ An annual budget provides for supply purchases.

☐ All student materials necessary to conduct the adopted program are available.

☐ All consumable materials and supplies are replaced promptly.

☐ Supplies required by the curriculum plan are available to individuals or small groups to conduct the laboratory phase of program.

☐ Live and perishable supplies are stored and provided as needed for individual laboratory work.

☐ Versitile supplies are available to provide for open ended student investigations.

---

a. Are the quantities sufficient?______________________________

b. Is their arrival timely?______________________________

4. Safety:

a. Number of science laboratories:______________________________

(01) Recommended student capacity:______________________________

(02) Actual student capacity:______________________________

b. Number of exits per laboratory:______________________________

(01) Exits properly marked: Yes__________No__________

(02) Storage rooms properly marked: Yes__________No__________

c. Number and type of fire extingushers:

Type Location

(01) Carbon dioxide: __________ ____________________

(02) Soda acid: __________ ____________________

(03) BC: __________ ____________________

(04) ABC: __________ ______________________________

(05) Water: __________ ______________________________

d. Number of sand buckets with sand: ______________________________

e. Number of approved fire blankets: ______________________________

f. Number of first aid or emergency charts: ______________________________

g. Number of first aid kits: ______________________________

h. Number of safety showers that work: ______________________________

i. Number of eyewash stations: ______________________________

(01) Installed with plumbing and aerifier: ______________________________

(02) Squeeze-bottle type: ______________________________

(03) Other: ______________________________

j. Eye, face and body protection:

(01) Number of safety glasses with full side shields: ______________

(02) Number of safety chemical goggles: ______________________________

k. Number of rubber gloves: ______________________________

l. Number of rubber, plastic, cloth aprons: ______________________________

m. Provision made for grounding of all electrical equipment: ______________

____

n. All waste recepticles properly marked: Yes__________No__________

o. Chemical storage cabinets:

(01) Flammable: ______________________________

(02) Acids and bases: ______________________________

p. Ventilition: ______________________________

(01) Fume hood/s: ______________________________

(02) Storeroom: ______________________________

(03) Lab space: ______________________________

q. Master cutoffs:

(01) Water: Yes____________No______________

(02) Gas: Yes____________No______________

(03) Electricity: Yes____________No______________

r. Safety discussions held regularly: Yes____________No______________

5. Facilities (including classrooms where lab activities are conducted):

a. General Adequacy: Facilities along with equipment and materials determiune the nature of the learning environment. Ideally, facilities will never limit learning activities. Facilities should be both versatile and varied to allow for independent study and investigations as well as group activities. Space should not be unnecessarily limited.

To assess the general adequacy of the science facilities portion of the science program, all components that have been met in the list below should be checked.

FUNDAMENTAL

☐ Science classrooms are provided with special facilities for teacher demonstrations.

☐ Flat table space is available in all science classrooms for individual or small group science activities.

☐ Sources of water are provided in every science classroom.

☐ Storage facilities for science equipment and materials are available in science classrooms or in the near vicinity of the classrooms.

SUBSTANTIAL

☐ Laboratory stations are provided for at least every two students assigned to a classroom at a given time.

☐ Water, gas, electricity and storage space for basic equipment are provided at or near each laboratory station.

☐ Space is provided adjacent to science classrooms for equipment storage and extracurricular or unscheduled student activities in science.

EXEMPLARY

☐ A science materials center and open lab staffed by certified science teachers is available to students at all times.

☐ Well equipped labs are available to all students during all scheduled science classes.

☐ Facilities are designed so that equipment and materials are available in the labs where students can supply their own needs as they carry out their investigations.

☐ Additional lab space is provided to allow students to maintain equipment setups related to their investigations over a period of several days.

---

b. Is/are it/they adequate?____________________

____

c. Is/are it/they configured for use the courses it/service services?____

____

____

d. Is/are it/they being used for its/their intended purpose/s?__________

____

6. Notes:

a.____________________

____

b.____________________

____

c.____________________

____

7. Observations/Recommendations for Improvement:

a.____________________

____

____

b.____________________

____

____

c.____________________

____

d.

STUDENT HANDBOOKS/COURSE DESCRIPTION GUIDES

1. Is there a course description for each of the science courses being offered?

2. Notes:

   a.

   b.

   c.

3. Observations/Recommendations for Improvement:

   a.

   b.

   c.

   d.

ELEMENTARY SCHOOL

K-6 LEARNING & TIME ALLOCATION GUIDE

(K-6 Learning & Time Allocation Guide DS Manual 2000.8, of 85DEC)

1. Is a copy of the guide available for use in the school office files?_____

2. Are guide wall charts posted where they can be used by:
   a. Administrators_____
   b. Teachers_____
   c. Students_____
   d. Parents_____

3. Does each science teacher have a copy of the guide?_____

4. Is there a relationship between information in the science sections of the guide and content in the various science classes?

5. Notes:
   a._____
   b._____
   c._____

6. Observations/Recommendations for Improvement:
   a._____

____

b. ____

____

____

c. ____

____

____

d. ____

____

____

TEACHING STAFF

1. General Adequacy. Competency to teach science requires a unique preparation and experience. To reach the optimum performance level, elementary teachers must go well beyond the minimum course work required for certification. They must become involved in professional organizations, read professional journals related to their field and stay abreast of contemporary curriculum recommendations. In addition, qualified science teachers must be able to work cooperatively within a hierarchy of responsibilities to provide a coordinated science program.

To assess the general adequacy of the science teaching faculty, all components that have been met in the list below should be checked.

FUNDAMENTAL

☐ All elementery teachers have had training in science and methods of teaching science.

☐ All science teachers are familiar with existing major curriculum developments at their grade levels.

☐ A majority of the

SUBSTANTIAL

☐ The school has one or more teachers who have an emphasis in science and can act as teacher-leader for teaching science.

☐ A majority of the science teachers have attended at least one

EXEMPLARY

☐ A majority of the teachers have at least a Master's degree in elementary education and some have specialized in science education.

☐ All science teachers are active members of at least one professional organization and a majority have participatteachers of science read regularly one professional journal.

☐ All teachers know appropiate safety practices for conducting laboratory activities at their grade level.

professional meeting in the past year.

☐ All science teachers can show evidence of having specifically studied major curriculum developments in their teaching area.

☐ Individual teachers have been designated as having specific leadership responsibilities in conducting the science program.

ed in the program of one professional meeting.

☐ All science teachers have directly participated in curriculum development, revision or adaptation projects that have been implementated in classroom teaching.

☐ A qualified individual is designated as coordinator of the science program with other staff members assigned to a hierarchy of teaching-leading responsibilities.

---

2. Notes:

a. ____________________

b. ____________________

c. ____________________

4. Observations/Recommendations for Improvement:

a. ____________________

b. ____________________

c. ____________________

d.

d. ____

……

GENERAL SECTION

SCIENCE TEACHER INSERVICE PROGRAM

1. Is there an on-going inservice program for science teachers (*NCA Standards For Secondary Schools*)?

____

2. Notes:

a. ____

b. ____

c. ____

3. Observations/Recommendations for Improvement:

a. ____

b. ____

c. ______________________________

____

____

NORTH CENTRAL ASSOCIATION (NCA) EVALUATION

1. Date of last NCA Report: ______________________________

2. Science related problems identified on the last NCA report:

   a. ______________________________

   ____

   b. ______________________________

   ____

   c. ______________________________

   ____

   d. ______________________________

   ____

3. Notes:

   a. ______________________________

   ____

   b. ______________________________

   ____

   c. ______________________________

   ____

4. Observations/Recommendations for Improvement:

   a. ______________________________

   ____

   ____

   b. ______________________________

c.

d.

SCHOOL IMPROVEMENT PLAN

1. Are the science education problems identified on the NCA report addressed here?

a. Actions being taken to resolve these problems:

(01)

(02)

(03)

(04)

2. Notes:

a.

b.

3. Observations/Recommendations for Improvement:

a. ______________________________

b. ______________________________

c. ______________________________

d. ______________________________

STANDARDIZED TESTING PROGRAM

1. What science deficiencies were identified using standardized testing procedures (scores lower than national norms)?

a. ______________________________

b. ______________________________

c. ______________________________

d. ______________________________

2. Notes:

40 A

a. ______________________________

____

b. ______________________________

____

c. ______________________________

____

3. **Observations/Recommendations for Improvement:**

a. ______________________________

____

____

b. ______________________________

____

____

c. ______________________________

____

____

d. ______________________________

____

____

SCHOOL WIDE ACTION PLAN(SWAP)

1. What procedures does SWAP use to correct the science deficiencies. (DSPA Regulation 2300.1 School-Wide Action Plan {SWAP} Policy of 88MAY31).

a. ______________________________

____

b. ______________________________

____

c. ______________________________

d. ______________________________

2. **Are the procedures identified in part "1" of this item being implemented?**

____

3. Notes:

a. ______________________________

b. ______________________________

c. ______________________________

4. Observations/Recommendations for Improvement:

a. ______________________________

b. ______________________________

c. ______________________________

d. ______________________________

GENERAL OBSERVATIONS/RECOMMENDATIONS

1.

2.

3.

4.

OUT BRIEFING

1. Name of the person/s with whom the out briefing was held?

2. Notes:

   a.

   b.

   c.

d.____

____

APPENDIX

This section contains those portions of each memorandum and other document cited in context and listed in the beginning of this publication. They are included here in the same order in which they are listed in the front of the document (see section [02] List of Supporting Documents).

DEPARTMENT OF DEFENSE
DEPENDENTS SCHOOLS
FUTENMA BOX 796
FPO SEATTLE 98772-0005

March 23, 1987

PACIFIC
ETG/635-3001/303-5

MEMORANDUM FOR District Superintendents
Principals

SUBJECT: Quality Program Indicators

Attached are the Quality Program Indicators each member of the Education Division has developed to use in program evaluation at the school level.

These indicators are guidelines which identify program qualities that coordinators will be observing when they visit the schools. I suggest that line administrators identify specific program indicators they want a coordinator to examine during an on-site visit, thereby the superintendent or principal will be the instructional leader who determines the direction of program evaluation.

Richard T. Cawley
RICHARD T. CAWLEY
Deputy Director

Attachments

Dir

DDir

ES

Ed

RS|00064

DEPARTMENT OF DEFENSE
DEPENDENTS SCHOOLS
FUTENMA BOX 796
FPO SEATTLE 98772-0005

October 7, 1987

PACIFIC

ERS/635-3982/303-15

MEMORANDUM FOR District Superintendents
Principals

SUBJECT: Science Quality Program Indicators

1. Dr. Cawley's memorandum, 23 Mar 87, subject: Quality Program Indicators, did not include the indicators for science.

2. The enclosures to this memorandum provide you with the Science Quality Program Indicators. They should be addended to your copy of Dr. Cawley's memorandum.

SIGNED

RICHARD M. SCHLENKER
Science Coordinator

Enclosures
1. Quality Program Indicators Science: Elementary
2. Quality Program Indicators Science: Secondary

cf: District Superintendent

QUALITY PROGRAM INDICATORS SCIENCE: ELEMENTARY

1. Objectives in DS Manual 2200.1 are used in this program.

2. The science program is taught using DoDDS adopted programs. Appropriate teaching time is allotted in all grades to: (a) hands-on activities, (b) areas identified in DS Manual 2000.8.

3. Readiness, basic reteaching and enrichment activities are part of the program.

4. Student progress is evaluated on a regular basis and at the end of the year using more than one method to determine competency with the objectives set forth in DSM 2200.1.

5. Use the following instructional strategies: (a) individualization; (b) hands-on activities involving all students; (c) group instruction; (d) multimedia media presentations.

6. Models are used to demonstrate abstract concepts.

7. School-wide programs are established as follows: (a) science fairs; (b) those which improve the science program based upon standardized test results and the SWAP.

QUALITY PROGRAM INDICATORS SCIENCE: SECONDARY (7-12)

1. The goals and objectives set forth in DS Manual 2200.1 are an integrated part of this program.

2. Courses listed in SIMS or approved in writing are taught in the curriculum.

3. Students are evaluated to determine their level of expertise with the objectives set forth in DSM 2200.1 and course grading is based upon these objectives.

4. All science courses include periodic laboratory sessions.

5. Laboratory sessions and homework assignments are chosen to foster competence with the objectives set forth in DSM 2200.1.

6. Instructional techniques include: (a) individulization; (b) multimedia approach; (c) group instruction.

7. Student centered course objectives are given to each student at the beginning of each new course.

8. Class objectives are available prior to and used during each class and they are written in student centered terms.

9. Class sessions are related to class objectives.

10. Students are afforded opportunities for independent study through participation in: (a) science fairs; (b) the JSHS.

DS Manual 2005.1
February 1988

DEPARTMENT OF DEFENSE DEPENDENTS SCHOOLS
ADMINISTRATORS' GUIDE

402 PLANNING, PROGRAMMING, BUDGETING, AND EXECUTION SYSTEM (PPBES)

A. PLANNING

The planning phase initiates the DoDDS PPBES. DoDDS managers outline goals and objectives which determine the direction and the destiny of their organization annually. These goals and objectives should be for long-term planning as well as short-term and should take into consideration fiscal constraints. For instance, planning should not be limited to those 5 years within the Five Year Defense Plan (FYDP), FY 1990-94. A good example of planning within the educational program is the Seven Year Educational Program Development Plan.

B. PROGRAMMING

During December/January the ODS Fiscal Division will issue a call to the regional directors for program objective memorandum (POM) issues. POM issues are for those programs that are new or for the enhancements of existing programs for which funding does not currently exist within the current FYDP. Issues submitted may cover all DoDDS appropriations: Operation and Maintenance (O&M); Procurement; and Military Construction (MILCON). Regional and ODS division POM issues are consolidated by the ODS Fiscal Division Budget Branch and discussed with the appropriate regional point of contact, the ODS division chiefs, and the Director, DoDDS. A final list of issues are consolidated and submitted to DASD (FSE&S) as a list of unfinanced requirements with the DoDDS POM in April. (Note: POM 90-94 will be submitted in April 1988.) The ODS Fiscal Division prepares each of the issues in the prescribed format outlined in guidance issued by OSD and defends them before the ASD (FM&P). Approved issues become part of issue books that are reviewed by the Defense Resources Board (DRB). The final decision of the DRB is issued as the Program Decision Memorandum (PDM) in late August. Those dollars included in the POM plus any issues approved by the DRB in the PDM become the base line for the Operation and Maintenance Budget Estimate Submission (BES), the Procurement Budget, and the MILCON Budget Submission to ODS/OMB on September 1.

C. BUDGETING

The ODS Fiscal Division will issue guidelines in January or February of each year for procurement budget items and will issue guidelines to govern the development of the regional operation and maintenance budget in March of each year.

For example: In March 1988, the ODS Fiscal Division will request the initial requirements for FY 1990. In accordance with those guidelines, the regional director and his/her staff will assume responsibility for the preparation of the regional budget for ODS review.

1. Process

Based upon school complex and regional office requirements, each regional director will submit their O&M and procurement budgets to ODS in accordance with the guidance issued by the ODS Fiscal Division. The O&M budget applies to 4 fiscal years: the prior year (PY=FY 1988), current year (CY=FY 1989), budget year (BY=FY 1990) and budget year plus one (BY+1=FY 1991). Emphasis in the preparation of the O&M budget should be given to the budget year and budget year plus one. The prior fiscal year serves as a base for comparison and analysis and as a means to update the current year requirements for budget execution purposes. The DoDDS budget reflects resource requirements and is included as a subelement of the DoD budget and as a separate section of the President's Budget which is presented to Congress each January.

The term "fiscal year" refers to the Federal Government accounting period which starts on October 1 each year and ends on September 30 of the following year. Operation and maintenance funds are available for 1 year only and, therefore, cannot be carried from 1 fiscal year to another. Military construction funds are available for 5 years and procurement funds for 3 years. However, in the case of procurement funds, funds are generally requested in the year in which they are obligated or at least 68 percent are obligated in the first year.

2. Regional Budget Submissions

a. Procurement. Based upon guidance issued by the ODS Fiscal Division in January, all regional directors will submit a procurement budget to the ODS Fiscal Division in March or April each year. Items included must cost $25,000 or more. Submissions must follow those procedures outlined in DS Regulation 4140.2.

b. Operation and Maintenance (O&M). Based upon guidance issued by the ODS Fiscal Division in March of each year, the regional directors will submit their budget requirements as much as 2 years in advance of execution. For example: The initial FY 1990 budget requirements will be submitted to the ODS Fiscal Division in June 1988; FY 1990 will be executed beginning October 1, 1989.

The regional budget submissions include budget exhibits which support requirements in the areas of personnel compensation and benefits, repair and maintenance projects, contractual services, etc. The key budget exhibits are OP-15 and OP-8. The basic formats for these two exhibits are prescribed in the DoD Budget Manual, DoD 7110-1-M. The OP-15 (Budget Summary) presents the DoDDS budget requirements in four broad categories: Administrative Costs; Education Costs; Logistics Costs; and Unique Costs. The OP-8 (Civilian Personnel Costs) presents the costs of personnel compensation and benefits according to the various categories of personnel (U.S. Direct Hire--SES/GM/GS, Wage Board, P.L. Teachers; Direct Hire Foreign Nationals; and Indirect Hire Foreign Nationals).

3. Review

Upon receipt of the budget estimates from the regional offices, the ODS Fiscal Division reviews and discusses each document with the other applicable ODS divisions and the Director, DoDDS. Regional budget submissions are also discussed during the Regional Directors' Meeting which is held in July. The ODS Fiscal Division consolidates all of the DoDDS budgetary requirements and submits a Budget Estimate Submission (BES) to OSD in September. (Example: FY 1990 will be submitted to OSD in September 1988.) The BES is submitted in accordance with the guidance issued by ODS (Comptroller) with the fiscal guidance in the FYDP at POM plus any DRB decisions issued in the PDM which is signed by the Secretary of Defense in late August. The Director, DoDDS in conjunction with the Chief, Fiscal Division, ODS and the ODS Budget Officer justify the DoDDS requirements at a joint ODS/OMB hearing. Following the hearing, ODS/OMB issue Program Budget Decisions (PBD) which affect the DoDDS program. The ODS Fiscal Division with the concurrence of the Director, DoDDS either accepts or appeals the decisions. The PBD cycle occurs during the months of October through December. The BES plus any adjustments made during the ODS/OMB review cycle becomes the base line for the DoDDS President's Budget which is submitted to Congress in January. The DoDDS Budget is reviewed by four Congressional committees. They are:

a. Authorization Committees:

(1) House Armed Services Committee

(2) Senate Armed Services Committee

b. Appropriations Committees:

(1) House Appropriations Committee

(2) Senate Appropriations Committee

During Congressional reviews, DoDDS receives general and/or specific questions pertaining to the overall DoDDS program. In addition, the DoDDS Director may be asked to testify at a formal Congressional hearing. The mark-up made by each Congressional committee appears in the Congressional Record and is included as a part of the Defense Agencies section. Congressional committees may make specific reductions against the DoDDS program. Unless specifically noted otherwise, the DoDDS program also may receive pro-rata share general reductions of other Defense Agency items reduced. An appropriation is passed by Congress when an agreement has been reached between the Congressional Committees and it has been signed by the President of the United States. If an appropriation has not been passed by October 1, Congress passes a continuing resolution (CR) pending an appropriation. The President also signs the CR. Under the continuing resolution, an agency may operate at prior year levels. No new starts or new programs are permitted under a continuing resolution.

D. EXECUTION

1. General

The overall responsibility for the execution of the DoDDS budget lies with the Chief, Fiscal Division, ODS. Each regional director has the responsibility for executing the budget of his/her region.

The regional budget submission (current year column) serves only as a plan and does not mean that funds are automatically available. The actual amount of funds which may be expended during the fiscal year for the operation of the region are set forth in the Fund Authorization Document (FAD). The FAD is the maximum amount of funds which may be expended for that fiscal year and is subject to the R.S. 1517 violations. The regional director may suballot funds to the Defense General Supply Center (DGSC) at Richmond, Virginia, and may issue funding targets to the District Superintendents Office (DSO) and/or school level.

2. Tuition Collections

It is the policy of DoD to allow the enrollment of non-DoD sponsored minor dependents in DoD dependents' schools provided that space is available and that the applicable tuition is paid in advance. DoD Directive 1342.13 establishes eligibility requirements and priorities for the applicable federally or nonfederally connected enrollments. Tuition rates are established for both federally and nonfederally connected students. The tuition rate charged includes direct cost and indirect DoD overhead costs for personnel service, unfunded benefits, and DoD user charges. The direct cost portion of the tuition is deposited to a prescribed DoDDS appropriation account (regional level) while the indirect portion of the tuition is deposited to the Miscellaneous Receipts Account of the U.S. Treasury. Detailed procedures for tuition collections, deposits, and reporting are outlined in DS Administrative Instruction 7200.2. The direct cost portion which is deposited to the regional level appropriation increases the amount of funds available for that region. Detailed instructions establishing the policies governing the computation and publication of tuition rates are outlined in DS Administrative Instruction 7200.1.

3. Reprogramming of Funds

Budget reviews should be held periodically in each region as well as in the ODS Fiscal Division during the year of execution to ensure an efficient utilization of funds. Generally, these reviews should be held at the end of 2nd Quarter, at the end of 3rd Quarter, and monthly or more often during the 4th Quarter. However, fund status should be monitored on a monthly basis throughout the fiscal year. Regional directors have the authority to internally reprogram between elements of expense and/or OP-15 line items within their allotted funds. This allows the regional director the flexibility which is necessary to accomplish planned programs and to fund unforeseen requirements. Any funds that cannot be utilized in one region should be available for withdrawal by ODS for allotment to other regions that have high priority requirements.

References:
DoD Directive 1342.13, "Eligibility Requirements for Education of Minor Dependents in Overseas Areas," July 8, 1982.
DS Administrative Instruction 7200.1, "Non-DoD Tuition Program," September 6, 1985.
DS Administrative Instruction 7200.2, "Advance Collection of Tuition Fees and Schedule 9 Reporting," September 9, 1984.
DoD Accounting Manual 7220.9-M, 1983, Part II, Chapter 26, Section D, Reimbursement Rates for Personnel Services.
DoD Instruction 7230.7, "User Charges," January 29, 1985.

DS Manual 2200.1
OCTOBER 1984

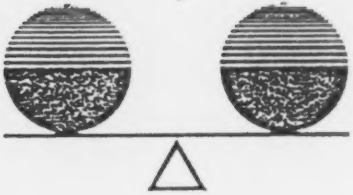
SCIENCE OBJECTIVES

FOR 1985-1992

DEPARTMENT OF DEFENSE
UNITED STATES OF AMERICA

DEPARTMENT OF DEFENSE
DEPENDENTS SCHOOLS

SCIENCE OBJECTIVES
FOR 1985—1992



Foreword

This manual contains objectives intended to guide the planning, development, implementation, and evaluation of science education in the Department of Defense Dependents Schools (DoDDS). They have been developed with the assistance of DoDDS teachers and administrators who believe that all learners must acquire a realistic and functional understanding of science in order to fully participate in our technologically-oriented society. Teachers are encouraged to use the objectives as guidance for both classroom and school-level planning. The DoDDS science curriculum will be greatly strengthened through the consistent application of these objectives in the conduct of science education throughout the school system. A sincere thanks to all of those who have contributed to the development of this manual.

Steve Motta

Steve Motta
Deputy Director

Acknowledgements

The Science Objectives Manual is a completely revised version of DS 2200.1, "Science Goals and Objectives," September, 1978, It is intended to reflect a contemporary approach to science education that emphasizes the learner's need to know and understand the important issues that relate science to society and technology. We appreciate the efforts of the many DoDDS educators who helped develop this current approach to the science curriculum and we, again, thank those who, early on, laid the foundation for this latest edition. We hope that all of these efforts will be translated into science experiences which help our students better understand the nature of science in their lives.

A Science Education Rationale

Science and technology are increasingly influential in our lives. A glance around your classroom or the laboratory should be all that is needed to convince you that these forces have forever changed many aspects of our profession. No one could deny that the discoveries of science have had a sharp impact on the way we think about the world. Somehow it has become a smaller place than we had imagined. The methods of science and technology are now shaping our national problem solving and decision making behavior. Scientists together with highly skilled technicians are now in frequent conversation with elected officials because the issues dealt with are too complex to be resolved by political means alone. The products of science and technology serve our needs but, at the same time, tend to disconcert us. Genetic engineering can deliver a plentiful and inexpensive source of insulin but will all engineered biologicals be so welcome in the future?

The Department of Defense Dependents Schools acknowledges the challenge presented by life in a technological era. It accepts responsibility to help prepare individuals to adapt to accelerated change and continued progress in the fields of science and technology. Accordingly, it has identified those key skills necessary for productive living in today's world and incorporated them into its entire K-12 science program.

Included among the skills that DoDDS chooses to emphasize are problem solving, decision making, evaluating, and application of understandings in a science context.

When equipped with these skills, DoDDS students can more successfully confront the complexity of life in today's world. These skills will help students better anticipate a likely future for themselves - one in which they behave with greater self assurance because they have developed a greater capacity to understand and control their own fate.

Introduction

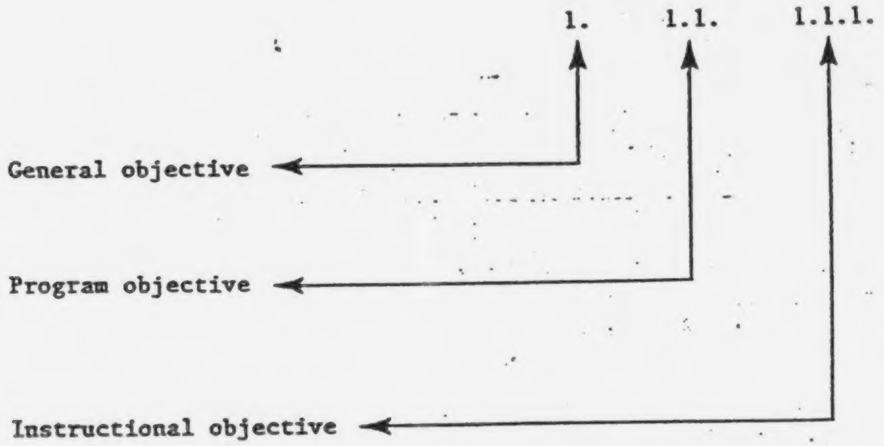
This statement of science objectives was developed by DoDDS elementary classroom teachers, science teachers, and science coordinators to serve the school system in two major ways:

- As the framework for science instruction, K-12.
- As the basis for evaluating learner outcomes in relation to the following DoDDS science program emphases:
    1. The application of science processes to solve problems, make decisions, and increase understanding.
    2. The utilization of the content and concepts of the biological, physical, and earth/space sciences.
    3. The evaluation of the role of science and technology in society.
    4. The exhibition of scientific behavior in school and everyday life.

To ensure that each of the four program emphases receives adequate support in all grade levels and courses, teachers and administrators are expected to utilize the science objectives when teaching and evaluating the school program and the specific component courses. Where texts alone do not provide adequate support, teachers will rely upon the program and instructional objectives to design appropriate science experiences for students.

Organization and Use

Statements in this document are organized in a hierarchical system in which the most general objectives are identified by single digits while the more specific ones are identified by two or more digits as seen below:



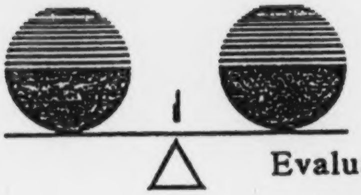
To complete this hierarchy, teachers and principals are encouraged to work together to formulate learner objectives. Learner objectives are foundational; they specify what the student should be able to do whereas the higher level objectives printed in this manual specify what teachers should be emphasizing in the science learning and skill areas.

Each instructional objective in this manual has been analyzed for appropriate grade placement. The results of the analysis are seen in the "E——P" lines opposite each instructional objective. "E" identifies the grade level at which entry level skills can be introduced. "P" marks the grade level where proficiency is expected. Levels can be adjusted on a class by class basis to meet the needs of individual students. The "E" and "P" lines also function to help teachers plan among themselves for the grade placement of particular objectives.

The instructional objectives are samples and are not meant to provide a comprehensive outline of a specific science course.

XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX

All objective statements in this document should be preceded by the phrase, "The learner should..."



Evaluate science processes to solve problems, make decisions, and increase understanding.

1.1 ACQUIRE INFORMATION THROUGH OBSERVATION AND MEASUREMENT.	K	1	2	3	4	5	6	7	8	9	10	11	12
1.1.1 (K-4) Observe and report about an object or event using more than one sense.	E				P								
1.1.2 (K-8) Observe objects and events by counting, comparing, estimating, or measuring in metric units.	E								P				
1.1.3 (3-8) Identify appropriate methods of measurement for a given task.				E					P				
1.1.4 (5-8) Report observations of an object or event in at least two ways (charts, graphs, tables, verbal, written narrative, etc.)						E			P				
1.1.5 (4-12) Discuss the possibility for error in any measurement.					E								P
1.1.6 (4-12) Select tools appropriate to the phenomenon being studied (for example, thermometer, computer).					E								P

1.2	USE APPROPRIATE RELATIONSHIPS TO ORGANIZE INFORMATION.	K	1	2	3	4	5	6	7	8	9	10	11	12
	1.2.1 (1-4) Describe the location of an object within its immediate environment.		E	—	—	P								
	1.2.2 (1-8) Identify properties useful for classifying objects.		E	—	—	—	—	—	—	P				
	1.2.3 (2-10) Develop a classification key using observable differences.			E	—	—	—	—	—	—	—	P		
	1.2.4 (5-8) Use angles and compass headings to communicate directions.						E	—	—	P				
	1.2.5 (3-9) Describe changes in position, size,				E	—	—	—	—	—	P			
	1.2.6 (6-12) Describe motion relative to stationary and moving objects.							E	—	—	—	—	—	P
	1.2.7 (8-12) Describe location in terms of three dimensions and time.									E	—	—	—	P

1.3 UTILIZE FACTS IN INFERENCES, HYPOTHESES, AND PREDICTION.	K	1	2	3	4	5	6	7	8	9	10	11	12
1.3.1 (2-8) Make predictions based on measurements.			E						P				
1.3.2 (1-6) Make predictions from tables or graphs.		E					P						
1.3.3 (3-6) Distinguish between an observation and an inference drawn from that observation.				E			P						
1.3.4 (4-12) Distinguish between relevant and irrelevant information.					E								P
1.3.5 (4-10) Identify the hypothesis or question being tested in a given experiment.					E						P		
1.3.6 (5-10) Formulate an hypothesis as an "if-then" statement.						E					P		
1.3.7 (5-12) Evaluate the reliability of a prediction.						E							P
1.3.8 (8-12) Distinguish between probable and less probable inferences.									E				P

1.4	GENERATE INFORMATION THROUGH FORMULATING QUESTIONS IN A SCIENTIFIC MANNER, MANIPULATING AND CONTROLLING VARIABLES, AND DESIGNING AND CONDUCTING RESEARCH.	K	1	2	3	4	5	6	7	8	9	10	11	12
	1.4.1 (K-8) Give examples of cause and effect relations.	E								P				
	1.4.2 (2-6) Answer a scientific question by collecting and examining-ing data through direct experience.			E				P						
	1.4.3 (4-8) Formulate a question that can be answered by science activity.					E				P				
	1.4.4 (4-7) Identify a variable which is deliberate-changed in an experiment.					E			P					
	1.4.5 .(5-8) Identify the variables which are controlled or held constant in an experiment.						E			P				
	1.4.6 (7-10) Identify examples of experiments which require large sample sizes and/or many trials to be valid.								E			P		
	1.4.7 (7-12) Evaluate the use of mental or computer models to explain phenomena.								E					P
	1.4.8 (8-12) Design research to answer a scientific question.									E				P
	1.4.9 (7-12) Identify the role of probability and chance in cause and effect situations.								E					P
	1.4.10 (9-12) Evaluate a plan for answering a scientific question.										E			P

1.5 Develop critical thinking skills through problem solving.	K	1	2	3	4	5	6	7	8	9	10	11	12
1.5.1 (K-9) State the problem (s) in a given situation.	E	—	—	—	—	—	—	—	—	P			
1.5.2 (2-5) List a sequence of steps to solve a problem.			E	—	—	P							
1.5.3 (3-12) Evaluate effectiveness of alternative solutions to problems.				E	—	—	—	—	—	—	—	—	P
1.5.4 (4-6) Acquire and verify data by comparison.					E	—	P						
1.5.5 (6-9) State the problem(s) in different ways.							E	—	—	P			
1.5.6 (6-12) Analyze information for relevancy.							E	—	—	—	—	—	P
1.5.7 (7-12) Use various methods to interpret data.								E	—	—	—	—	P

1.6 COMMUNICATE THE INTERPRETATION OF DATA.	K	1	2	3	4	5	6	7	8	9	10	11	12
1.6.1 (4-7) State the question and conclusions of an investigation.					E	—	—	P					
1.6.2 (4-8) Use graphs to present information.					E	—	—	—	P				
1.6.3 (7-10) Evaluate the presentation of a research project.								E	—	—	P		

1.7	UNDERSTAND THE PERSONAL NATURE OF SCIENCE.	K	1	2	3	4	5	6	7	8	9	10	11	12
	1.7.1 (K-12) Identify activities of people who work in science.	E												P
	1.7.2 (K-4) List careers in science and technology.	E				P								
	1.7.3 (K-12) Identify scientists and their contributions.	E												P
	1.7.4 (5-9) Explore job entry requirements of careers in science and technology.						E				P			
	1.7.5 (5-12) Name science-related behaviors that are important for citizens.						E							P
	1.7.6 (7-12) Give examples of the interactions of a scientist and society e.g., Galileo or Einstein.								E					P
	1.7.7 (7-12) Describe the creative nature of scientific activity.								E					P

2

Utilize the content and concepts of the biological, physical, and earth sciences.

2.1	KNOW THE STRUCTURE, FUNCTION, AND BEHAVIOR OF REPRESENTIVE LIFE FORMS.	K	1	2	3	4	5	6	7	8	9	10	11	12
	2.1.1 (K-4) Distinguish living from non-living things.	E	—	—	—	P								
	2.1.2 (K-12) Practice good health habits.	E	—	—	—	—	—	—	—	—	—	—	—	P
	2.1.3 (3-7) Summarize the life functions that distinguish living from non-living things.				E	—	—	—	P					
	2.1.4 (2-5) Identify major structural and functional characteristics of plants and animals.			E	—	—	P							
	2.1.5 (3-6) Describe adaptions of plants and animals.				E	—	—	P						
	2.1.6 (4-7) Know the elements of human nutrition.					E	—	—	P					
	2.1.7 (5-7) Describe how plant and animal cells, tissues, and systems function to maintain life.						E	—	P					

2.1 (Continued)	K	1	2	3	4	5	6	7	8	9	10	11	12
2.1.8 (4-7) Describe different types of growth, development, reproduction, and life cycles in plants and animals, including humans.					E	—	—	P					
2.1.9 (7-10) Describe survival behavior patterns of animals, e.g., migration, territoriality, etc.								E	—	—	P		

2.2 UNDERSTAND THE PRINCIPLES OF EVOLUTION AND HEREDITY.	K	1	2	3	4	5	6	7	8	9	10	11	12
2.2.1 (3-7) Identify those characteristics of living things that are inherited.				E	—	—	—	P					
2.2.2 (4-7) Discuss similarities and differences among related individuals.					E	—	—	P					
2.2.3 (6-10) Apply the theory of heredity to predict the characteristics of offspring.							E	—	—	—	P		
2.2.4 (5-8) Know the broad features of fossil succession in the geologic record.						E	—	—	P				
2.2.5 (7-10) Compare scientific theories that explain the means by which plants and animals have evolved over time.								E	—	—	P		

2.3	UNDERSTAND THE INTERACTION OF PHYSICAL AND BIOLOGICAL ELEMENTS OF THE ENVIRONMENT.	K	1	2	3	4	5	6	7	8	9	10	11	12
	2.3.1 (1-4) Identify sources of energy (e.g., food) for living things.		E	—	—	P								
	2.3.2 (2-7) Describe a food chain.			E	—	—	—	—	P					
	2.3.3 (1-6) Identify environmental conditions appropriate and inappropriate for plants and animals.		E	—	—	—	—	P						
	2.3.4 (5-10) Explain requirements of photosynthesis and respiration.						E	—	—	—	—	P		
	2.3.5 (5-10) Identify causes of disease, e.g., pathogens, stress, deficiency, radiation, toxins, and heredity.						E	—	—	—	—	P		
	2.3.6 (5-10) Describe the body's defenses against diseases.						E	—	—	—	—	P		
	2.3.7 (5-10) Explain the interactions of individuals and groups in ecosystems.						E	—	—	—	—	P		
	2.3.8 (7-10) Describe the flow of energy from the sun through living organisms, including producers, consumers, and decomposers.								E	—	—	P		
	2.3.9 (7-10) Outline the principal factors that may limit population size and distribution of plants and animals, including humans.								E	—	—	P		

2.4 UNDERSTAND THE PROPERTIES AND INTERACTIONS OF MATTER AND ENERGY.	K	1	2	3	4	5	6	7	8	9	10	11	12
2.4.1 (K-4) Identify the similarities and differences of solids, liquids, and gases.	E				P								
2.4.2 (3-5) Identify matter by its physical characteristics, e.g., hardness, bouyancy, vein patterns.				E		P							
2.4.3 (3-6) Know that energy is involved in a change of state.				E			P						
2.4.4 (4-6) Know that molecules are small particles whose presence may be detected by the senses.					E		P						
2.4.5 (6-11) Identify matter by its chemical characteristics.							E					P	
2.4.6 (5-9) Identify substances as elements, compounds, or mixtures.						E				P			
2.4.7 (6-9) State a word-model of an atom.							E			P			
2.4.8 (4-9) Give evidence for the particle nature of matter.					E					P			
2.4.9 (8-11) Give and uses of acids, bases, salts, oxides, and organic compounds.									E			P	
2.4.10 (7-10) Give examples of biochemical processes.								E			P		

2.5	UNDERSTAND THE CONCEPTS OF FORCE, MOTION, AND ENERGY.	K	1	2	3	4	5	6	7	8	9	10	11	12
	2.5.1 (1-4) Know that Forces are required for the movement of objects.		E			P								
	2.5.2 (5-9) Know that forces can change an object's shape, speed, or direction.						E				P			
	2.5.3 (6-9) Give examples of kinetic and potential energy.							E			P			
	2.5.4 (5-9) Give examples of fundamental kinds of forces, e.g., electrical, nuclear, mechanical, and gravitational.						E				P			
	2.5.5 (6-9) Explain the concept of power (rate of using energy).							E			P			
	2.5.6 (9-12) Demonstrate that mass in motion has momentum and energy.										E			P

2.6	UNDERSTAND MAJOR ENERGY TRANSFORMATIONS.	K	1	2	3	4	5	6	7	8	9	10	11	12
	2.6.1 (3-6) Identify devices that change energy from one form to another.				E			P						
	2.6.2 (5-9) Identify how power production systems transform energy.						E				P			
	2.6.3 (9-12) Describe an energy transformation in terms of the principle of conservation of energy.										E			P
	2.6.4 (9-12) Relate energy transmission to wave and particle theory.										E			P

2.7 UNDERSTAND HEAT.	K	1	2	3	4	5	6	7	8	9	10	11	12
2.7.1 (1-4) List sources of heat.		E			P								
2.7.2 (3-6) Compare heat conductors and insulators.				E			P						
2.7.3 (9-12) Describe heat and tempetature in terms of kinetic molecular energy.										E			P

2.8 UNDERSTAND LIGHT.	K	1	2	3	4	5	6	7	8	9	10	11	12
2.8.1 (1-4) List sources of light.		E			P								
2.8.2 (5-9) Describe how visible light behaves.						E				P			
2.8.3 (6-12) Describe the behavior of reflected and refracted light.							E						P

2.9 UNDERSTAND SOUND.	K	1	2	3	4	5	6	7	8	9	10	11	12
2.9.1 (K-4) Describe how sound is produced.	E				P								
2.9.2 (3-6) Demonstrate differences of pitch, volume, and quality of sounds.				E			P						
2.9.3 (6-9) Explain how sound is transmitted through various media.							E			P			

2.10 UNDERSTAND ELECTRICITY.	K	1	2	3	4	5	6	7	8	9	10	11	12
2.10.1 (4-6) Identify sources of electrical energy.					E		P						
2.10.2 (2-5) Identify uses of electricity.			E			P							
2.10.3 (3-6) Describe the function of the parts of a simple electrical system.				E			P						
2.10.4 (6-9) Know how electric charges may be caused to move.							E			P			
2.10.5 (6-9) Construct series and parallel circuits.							E			P			
2.10.6 (6-9) Describe how the terms volt, ampere, watt, and kilowatt hour apply to household use.							E			P			

2.11 UNDERSTAND MAGNETISM.	K	1	2	3	4	5	6	7	8	9	10	11	12
2.11.1 (K-3) Describe the characteristics of magnets.	E			P									
2.11.2 (6-9) Explain how magnetic fields are produced.							E			P			

2.12 UNDERSTAND THE PRINCIPLES AND CONCEPTS OF EARTH/SPACE SCIENCE.	K	1	2	3	4	5	6	7	8	9	10	11	12
2.12.1 (K-7) Describe a current space exploration activity.	E							P					
2.12.2 (2-6) Measure and predict local weather.			E				P						
2.12.3 (4-8) Describe weathering and other types of erosion.					E				P				

2.12 CONTINUED	K	1	2	3	4	5	6	7	8	9	10	11	12
2.12.4 (4-8) Relate minor geological features of the earth's surface to the distribution of plants and animals.					E				P				
2.12.5 (5-8) Describe global and local weather patterns in terms of rotation of the earth, topography, and the movement of water and air masses.						E			P				
2.12.6 (4-8) Identify the processes which change the earth's surface.					E				P				
2.12.7 (6-8) Use scientific theories to explain geologic history.							E		P				
2.12.8 (4-8) Know motions of stars, sun, planets, and satellites.					E				P				
2.12.9 (4-8) Explain how the motions of heavenly bodies affect us, e.g., days, seasons, tides, and asteroid/meteor impacts.					E				P				
2.12.10 (4-8) Demonstrate how the positions of the sun, earth, and moon, explain phases of the moon, eclipses and seasons.					E				P				
2.12.11 (8-12) Explain how climate information is utilized in managing human activities.									E				P
2.12.12 (8-12) Describe scientific theories of the origin and evolution of the universe.									E				P
2.12.13 (8-12) Discuss benefits derived from the space exploration program.										E			P

3.3 PRACTICE CONSERVATION MEASURES.	K	1	2	3	4	5	6	7	8	9	10	11	12
3.3.1 (K-12) Identify pleasant and unpleasant conditions in the personal environment.	E												P
3.3.2 (K-12) Select ways to conserve or preserve the natural and built environment.	E												P
3.3.3 (K-12) Participate in activities that improve the environment.	E												P
3.3.4 (5-12) Defend limits on the use of natural environments.							E						P

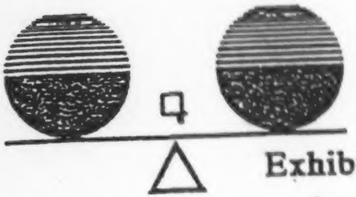


Exhibit scientific behavior in school and everyday life.

4.1 UNDERSTAND THE BROAD HISTORY OF THE DEVELOPMENT OF SCIENTIFIC THOUGHT.	K	1	2	3	4	5	6	7	8	9	10	11	12
4.1.1 (4-8) Describe how a science research group operates today.					E	—	—	—	P				
4.1.2 (7-10) Know how scientific inquiry has developed over time.								E	—	—	P		

4.2 VALUE SCIENTIFIC PROCESSES.	K	1	2	3	4	5	6	7	8	9	10	11	12
4.2.1 (K-12) Display appropriate safety procedures.	E	—	—	—	—	—	—	—	—	—	—	—	P
4.2.2 (4-7) Consider conflicting data when engaging in scientific investigations.					E	—	—	P					
4.2.3 (4-7) Seek alternative approaches to problems.					E	—	—	P					
4.2.4 (6-9) Recognize the limitations of a study.							E	—	—	P			
4.2.5 (6-9) Phrase conclusions of a study in tentative terms.							E	—	—	P			
4.2.6 (4-8) Distinguish between scientific and nonscientific explanations of phenomena.					E	—	—	—	P				

4.3 DISPLAY SCIENTIFIC ATTITUDES.	K	1	2	3	4	5	6	7	8	9	10	11	12
4.3.1 (K-12) Express curiosity.	E												P
4.3.2 (K-12) Demonstrate a continuing search for deeper understanding.	E												P
4.3.3 (K-12) Demonstrate respect for living things.	E												P
4.3.4 (K-12) Display confidence in ability to engage in scientific inquiry.	E												P
4.3.5 (K-12) Cooperate with others in science inquiry.	E												P
4.3.6 (5-8) Demonstrate a preference for a variety of sources.						E			P				
4.3.7 (5-12) Display reasonable skepticism of unsubstantiated conclusions.						E							P

Science Education Task Group

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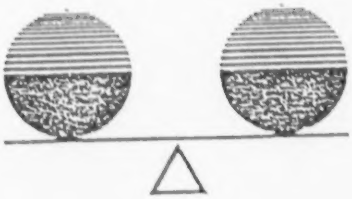


DEPARTMENT OF DEFENSE
DEPENDENTS SCHOOLS
FUTENMA BOX 796
FPO SEATTLE 98772-0005

PACIFIC

August 11, 1987

ERH/635-2267/303-11

MEMORANDUM FOR All Principals

SUBJECT: 1987-88 Approved Textbook Listing

Attached is the DoDDS-Pacific Approved Textbook Listing. It is organized by curriculum areas with titles, publishers and copyright dates.

These adoptions represent the only texts authorized for purchase and use as the core for basic programs in the Pacific Region schools. Previously adopted or supplementary texts will not be used in lieu of the authorized basic texts. As implementation of new programs becomes effective, excess previously adopted texts are to be removed from the school in accordance with existing disposal procedures when sufficient replacement copies of newly adopted texts have been received.

A maximum of 25 copies of a previously adopted text may be retained by the school. In addition, 25 copies of given supplemental texts may be purchased/used for enrichment or remediation. Any exception to this policy, to include textbooks for DoDDS-P approved course offerings not listed, must be authorized at the regional level, ATTN: Education Division.

Your suggestions as to improvements in the organization of this document are greatly appreciated.

Lee Davis

LEE DAVIS, Chief
Education Division

Enclosure:
DoDDS-Pacific Approved Textbook Listing

cf: Dist Supts

DoDDS-PACIFIC REGION

APPROVED TEXTBOOK LISTING

AS OF

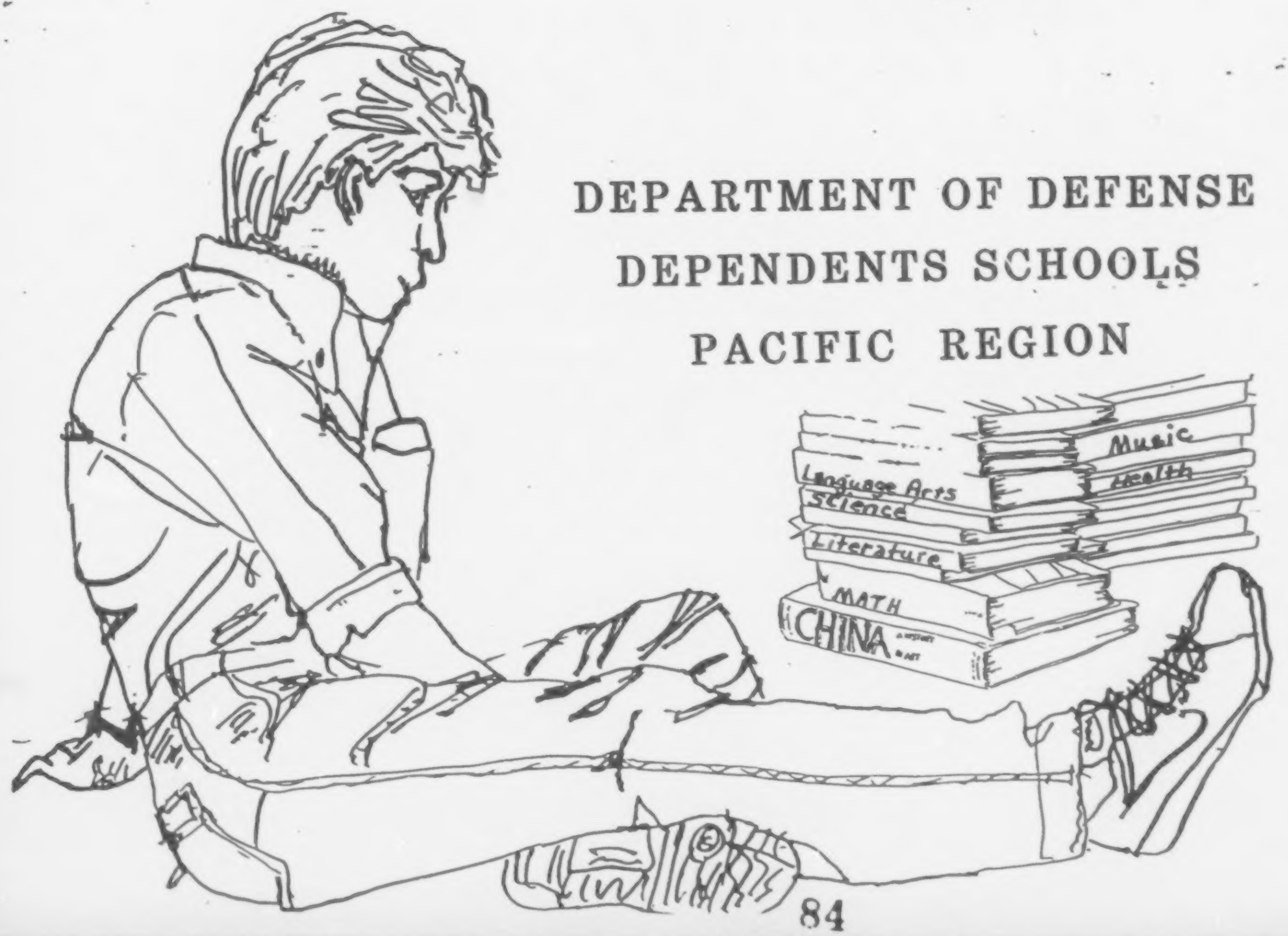
AUGUST 1987

SCIENCE

Grade Level	Title	Publisher	Copyright Date
K	Addison-Wesley Science	Addison-Wesley	1984
1-6	HBJ Science	Harcourt Brace Jovanovich	1985
7	Focus on Life Science	Merrill	1984
7	Focus on Life Science: A Learning Strategy for the Laboratory	Merrill	1984
8	Focus on Earth Science	Merrill	1984
8	Focus on Earth Science: A Learning Strategy for the Laboratory	Merrill	1984
9	Focus on Physical Science	Merrill	1984
9	Focus on Physical Science: A Learning Strategy for the Laboratory	Merrill	1984
10	Biology: Living Systems	Merrill	1983
10	Biology: An Everyday Experience	Merrill	1981
10	Probing Levels of Life: A Laboratory Manual	Merrill	1983
10	Laboratory Biology: Investigating Living Systems	Merrill	1983
10	Biology: Laboratory Experiences	Merrill	1985
11	Chemistry: A Modern Course	Merrill	1983
11	Laboratory Chemistry	Merrill	1983
11	Solving Problems in Chemistry	Merrill	1983
12	Modern Physics	Holt, Rinehart and Winston	1984
12	Modern Physics: Exercises and Experiments in Physics	Holt, Rinehart and Winston	1984

DSPA MANUAL 2000.9
February 1987

7-12 SEQUENTIAL LEARNING GUIDE



DEPARTMENT OF DEFENSE
DEPENDENTS SCHOOLS
PACIFIC REGION

SCIENCE

Life Science

- Observe objects and events by counting, comparing, estimating, or measuring
- Describe adaptations of plants and animals to their environment
- Describe different types of growth, development, reproduction, and life cycles in plants and animals, including humans
- Understand the principles of evolution and heredity
- Identify causes of disease, e.g. pathogens, stress, deficiency, radiation, toxins, and genetic
- Outline principal factors that may limit population size and distribution of plants and animals, including humans
- Select ways to conserve natural and man-made environments

Earth Science

- Describe earth composition and structure
- Describe global and local weather patterns in terms of rotation of the earth, topography, and the movement of water and air masses
- Explain how the motion of heavenly bodies affects us; e.g. days, seasons, tides, and asteriod/meteor impacts
- Describe scientific theory of origin and evolution of the universe
- Discuss benefits derived from the space exploration program
- Identify renewable and nonrenewable natural and energy resources found on the earths environment.
- List benefits and concerns which have resulted from scientific/ technological innovations

Physical Science

- Understand the properties and interactions of matter and energy
- Identify the similarities and differences among solids, liquids, and gases
- Give evidence for the particle nature of matter
- Identify matter by its physical and chemical characteristics
- Relate force, motion, energy, and power
- Know behavior of different forms of energy
- Predict a series of consequences from a scientific/technological change

Biology

- Understand the chemical and structural basis of life
- Know anatomy, physiology, and behavior of representative life forms
- Understand principles of evolution and heredity
- Identify sources of energy for living things
- Describe role of biogeochemical cycles in nature
- Explain requirements of photosynthesis and respiration
- Explain interactions of individuals and groups in ecosystems
- Outline principal factors that may limit population size and distribution of plants and animals, including humans
- Analyze current issues of science and technology and their impact on people and other organisms
- Generate information by designing and conducting a simple research experiment

Chemistry

- Explain solutions and solubility
- Explain atomic theory
- Determine chemical reactions including energy changes and mole method
- Explain kinetic theory of gases, liquids, and solids
- Explain solutions and solubility
- Know and use periodic table of the elements
- Employ chemical bonding theory
- Understand ionization energy and electron energy levels explaining chemical characteristics
- Predict rates of reaction
- Describe equilibrium and equilibrium factors
- Understand oxidation-reduction chemical reactions
- Give examples and uses of acids, bases, salts, oxides, and organic compounds

Physics

- Understand nature and interactions of matter and energy and relativity theory
- Apply concepts of force, motion, and energy
- Understand energy transformations including radioactivity
- Understand heat, light, and sound
- Understand competition of ideas between earth-centered and sun-centered astronomy
- Understand classical mechanics and quantum mechanics models
- Understand magnetism, static and current electricity
- Understand interactions between electricity and magnetism and the role of electromagnetic wave motion
- Understand electronics of basic technology and current communications systems

Advanced Biology

- Make an indepth investigation into any of the following fields:
    - Anatomy and Physiology
    - Microbiology
    - Histology
    - Oceanography
    - Comparative Anatomy
    - Botany
    - Ecology
    - Genetics
    - Zoology
- Learn various laboratory techniques involved in above investigations; i.e., slide preparation and fixation, microphotography, plant and animal dissection, sampling of organisms, etc.
- Individually design and conduct an experiment with production of a scientific research paper

Oceanography

- Describe major physical features and development of the oceans and their basins
- Examine properties of seawater and the effects of seawater on ocean and marine life
- Describe life in the sea
- Understand structure and dynamics of the marine ecosystem
- Describe physical characteristics and effects of oceanic processes in the open ocean and the coastal ocean
- Understand factors that control our ocean resources

ALTERNATIVE

Advanced Science Courses 10-12

Advanced courses require regional approval and should be developed at the school level based upon the availability of (1) a staff member to teach the advanced course and (2) an indication of sufficient student need and interest. Course outlines and objectives should be written and posted. Examples of some advanced courses are Advanced Biology, Advanced Chemistry, Advanced Physics, Astronomy, Physiology, Biochemistry, and Oceanography.

DEPARTMENT OF DEFENSE
DEPENDENTS SCHOOLS
FUTENMA BOX 796
FPO SEATTLE 98772-5081

17 April 1987

PACIFIC

ERC/635-2151/308

MEMORANDUM FOR District Superintendents
Principals

SUBJECT: Course Titles and Student Information Management System (SIMS) Computer Codes

The course titles on the attached list have been given the appropriate SIMS computer course codes for use throughout the DoDDS-Pacific Region. These course titles are consistent with DoDDS curriculum and approved adopted programs and should be used on report cards and in local course description handbooks beginning School Year 1987-88.

The course code, long title, and computer title for each course are provided and will be used with the new SIMS. Schools may offer only the courses listed; however, most of the courses currently taught in DoDDS-Pacific can be subsumed under the course titles attached. Please contact the appropriate curriculum coordinator in the DoDDS-Pacific Regional Office if you have any questions.

The recommended course length on the accompanying list may vary provided that it is appropriate for that grade level and consistent with the curriculum guide for that discipline. All other changes to this listing must have the approval of the DoDDS-Pacific Education Division.

In the event that a school has a course that is unique to DoDDS-Pacific, such as marine biology or Asian studies, then a request to offer that course should be forwarded to the DoDDS-Pacific Regional Office according to the instructions in the Administrators' Guide(DS Manual 2005.1, April 1985) section 201, Curriculum Development. This process will not only assure that the course content of these DoDDS-Pacific courses will have the same high quality as those which have gone through the seven-year curriculum review process but it will also assure that the course content is consistent throughout DoDDS-Pacific. The January 15 proposal deadline listed in the innovations and revision process is suspended for this school year. Schools will have until May 22, 1987, to submit course approval to the Regional office.

Any questions concerning this listing should be directed to Mr. Richard Carpenter, DoDDS-Pacific Education Division at 635-2151.

Jerald E. Bloom

Jerald E. Bloom
Director

Attachment

COURSE CODE	LONG TITLE	COMPUTER TITLE	RECOMMENDED COURSE LENGTH
READING			
RED101	READING GRADE 7	READING 7	Y
RED201	READING GRADE 8	READING 8	Y
RED301	READING GRADE 9	READING 9	Y
RED401	READING GRADE 10	READING 10	Y
RED501	READING GRADE 11	READING 11	Y
RED601	READING GRADE 12	READING 12	Y
SCIENCE			
SCD101	LIFE SCIENCE	LIFE SCI	Y
SCE201	EARTH SCIENCE	EARTH SCI	Y
SCF301	PHYSICAL SCIENCE	PHYS SCI	Y
SCB301	BIOLOGY	BIOLOGY	Y
SCC401	CHEMISTRY	CHEMISTRY	Y
SCP401	PHYSICS	PHYSICS	Y
SCB402	ADVANCED BIOLOGY	ADV BIOLOGY	Y
SCC402	ADVANCED CHEMISTRY	ADV CHEM	Y
SCP402	ADVANCED PHYSICS	ADV PHYSICS	Y
SCZ101	SCIENCE AND HEALTH 7	SCI HEALTH 7	Y
SCZ201	SCIENCE AND HEALTH 8	SCI HEALTH 8	Y
SCZ401	ASTRONOMY	ASTRONOMY	Y
SCZ402	PHYSIOLOGY	PHYSIOLOGY	Y
SCZ403	BIO-CHEMISTRY	BIO-CHEM	Y
SCZ404	OCEANOGRAPHY	OCEANOGRAPHY	Y
SAT			
SAT401	COLLEGE ENTRANCE PREPARATION	COL ENT PREP	S
SPECIAL EDUCATION			
SEZ161	ADAPTED PHYSICAL EDUCATION 7	ADAPTED PE 7	Y
SEZ261	ADAPTED PHYSICAL EDUCATION 8	ADAPTED PE 8	Y
SEZ361	ADAPTED PHYSICAL EDUCATION 9	ADAPTED PE 9	Y
SEZ461	ADAPTED PHYSICAL EDUCATION 10	ADAPTED PE10	Y
SEZ561	ADAPTED PHYSICAL EDUCATION 11	ADAPTED PE11	Y
SEZ661	ADAPTED PHYSICAL EDUCATION 12	ADAPTED PE12	Y
SEZ170	MODIFIED COMPUTER LITERACY	MOD COMP LIT	Y
SEZ370	MODIFIED COMPUTER SCIENCE	MOD COMP SCI	Y
SEZ121	MODIFIED MATH 7	MOD MATH 7	Y
SEZ221	MODIFIED MATH 8	MOD MATH 8	Y
SEZ321	MODIFIED MATH I	MOD MATH I	Y
SEZ421	MODIFIED MATH II	MOD MATH II	Y
SEZ151	MODIFIED HEALTH 7	MOD HEALTH 7	S
SEZ251	MODIFIED HEALTH 8	MOD HEALTH 8	S

DEPARTMENT OF DEFENSE
OFFICE OF DEPENDENTS SCHOOLS
2461 EISENHOWER AVENUE
ALEXANDRIA, VIRGINIA 22331

EDUCATION

DS REGULATION 2000.1
September 7, 1984

DEPARTMENT OF DEFENSE DEPENDENTS SCHOOLS HIGH SCHOOL GRADUATION REQUIREMENTS

Reference: DoD Directive 1342.6, October 1, 1978, Department of Defense Dependents Schools (DoDDS), with change 1

A. PURPOSE

This Regulation establishes uniform high school graduation requirements for the Department of Defense Dependents Schools (DoDDS).

B. CANCELLATION

This Regulation cancels DS Regulation 2000.1, March 21, 1977, same subject.

C. APPLICABILITY

This Regulation applies to all high schools and other schools with high school grades.

D. DEFINITIONS

1. High School Student. A high school student is a student who is enrolled in grades 9, 10, 11, or 12.

2. High School Grades. High school grades are grades 9 through 12.

3. High School Course. A high school course is a course offered in high school grades taken by an enrolled student.

4. Units of Credit. Units of credit are to be computed and awarded to each Grade 9-12 student on a semester basis. One unit of credit signifies the successful completion of the study of any subject meeting five periods, or its equivalent, per week for two semesters, 18 weeks each (a minimum of 120 clock hours of instruction); one-half unit of credit signifies the successful completion of the study of any subject meeting five periods, or its equivalent, per week for one semester, 18 weeks; one-quarter unit of credit signifies the successful completion of the study of any subject meeting an average of 2½ times, or its equivalent, per week for one semester (18 weeks). Grade 7 and 8 students authorized enrollment in 9-12 classes (i.e., Spanish I) will be awarded the appropriate units of credit for successful course completion. However, credits so earned by 7th or 8th grade students will not be considered as fulfilling any portion of graduation requirements.

DISTRIBUTION: X

5. Required and Elective Courses. A required course is a course that every high school student must complete for graduation as required by this regulation. (See section E.1.) An elective course is one that is not required for graduation but is chosen to meet academic and vocational needs.

6. Laboratory Course. A course that will include a minimum of 30 experiential (non-lecture) periods per year.

E. POLICY

1. A minimum of 20 units of credit is required for high school students to graduate from a DoDDS high school, starting with school year 1987-88. Fifteen of the 20 units will be in required areas and can only be earned in stipulated courses. It should be emphasized that these are minimum requirements.

Requirements:	UNITS	
Language Arts (English, reading, speech, and journalism)	4	
Social Studies (1 unit of U.S. History and ½ unit of U.S. Government required)	3	
Mathematics	2	
Science (Two laboratory sciences are required)	2	
Career Education (home economics, industrial arts, business education, cooperative work experience, automotive technology, graphic communications, cosmetology, medical/dental technology, electricity/electronics)	1	
Aesthetics (art, music, humanities, drama, dance)	1	
Physical Education	1	
Health	½	
Computer Science	½	
		15
Electives:		
Foreign Language (For the college bound student, two years of foreign language are strongly recommended.)	2	
		5
TOTAL		20

Requirements: (Con't)

2. For school year 1984-85 through school year 1986-87, 18 units of credit will be required for high school students to graduate from a DoDDS high school. One unit of mathematics and one unit of science will be required during this period of time.

3. Students may graduate when they have met the graduation requirements usually scheduled over a 4-year period.

4. In individual cases, the principal may grant waivers for graduation requirements, if, in his or her opinion, such action is considered to be in the best interests of the student.

5. DoDDS will accept the official grades and courses of transfer students. Courses interrupted by transfer may be continued to completion, if, in the judgement of the principal, the time lost in transfer did not impact negatively on a student's chances for successful completion.

6. Students enrolling in a DoDDS school during their senior year may be graduated by meeting the requirements of their previous school if, through no fault of their own, they cannot meet DoDDS graduation requirements.

7. Generally, students are expected to complete an 8-semester high school program in preparing for graduation. Upon application, students may be graduated early after completing graduation requirements if they have clearly demonstrated scholastic aptitude or vocational readiness, if there is a financial need for early entry into the labor market, or if health and other mitigating circumstances would be served. An application, with parental approval, must be in writing. The application for early graduation must be submitted prior to course selection for grade 12 students desiring to graduate at the end of the first semester of their senior year. All students qualifying for high school graduation will receive the same diploma. Students who are handicapped as defined by DoD Instruction 1342.12, may qualify for graduation by either (1) satisfying the requirements of this Regulation; or (2) meeting the objectives for graduation in their Individualized Education Program; or (3) earning Carnegie Units.

8. With approval of the principal, a correspondence course may be substituted for a course which is not available. (A maximum of 4 units of such credit may be accepted; however, more may be accepted for physically handicapped students and for students residing in locations where an accredited high school is not available for resident study.)

F. RESPONSIBILITIES

1. Principals will:

a. Comply with policies outlined in this Regulation.

b. Ensure that students recognize that the 20 units required for graduation are a minimum requirement. Ensure that students recognize that accrual of additional units of credit e.g., 2 years of foreign language, during their 4-year high school career will provide them with a distinct advantage in pursuing post-high school education.

F. RESPONSIBILITIES (Con't)

c. Grant course credit in accordance with standards of DoDDS accreditation agency, the North Central Association of Colleges and Schools.

d. Maintain permanent records of courses, grades, credits earned, and all documentation for approval of waivers.

2. Students are responsible to become informed of other requirements for their post-high school plans.

G. EFFECTIVE DATE AND IMPLEMENTATION

This Regulation is effective with school year 1984-85. The requirements of this Regulation will not be supplemented. Two copies of implementing instructions shall be forwarded to Director, DoDDS, within 90 days of the effective date.

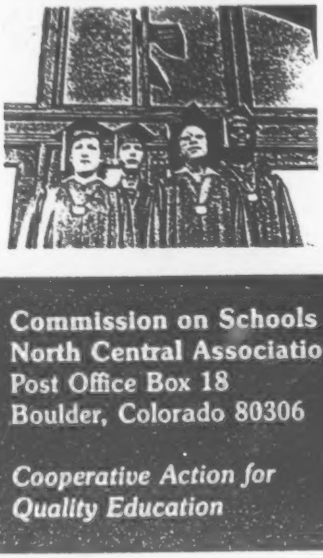
Beth Stephens

Beth Stephens, Ph.D.
Director

NCA

"The purpose of the Association shall be the development and maintenance of high standards of excellence for universities, colleges, and schools, the continued improvement of the educational program and the effectiveness of instruction on school and college levels through a scientific and professional approach to the solution of educational problems, the establishment of coooperative relationships between the schools and colleges and universities within the territory of the Association, and the maintenance of effective working relationships with other educational organizations and accrediting agencies." (Articles of Incorporation of the North Central Association).

Standards for Secondary Schools



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variations from Standards 3.31 through 3.38 may be approved without citation in a school enrolling such a uniquely constituted student body that a different distribution is desirable.

3.31 **Language Arts** *(such as English, reading, speech, journalism)* 4 units

3.32 **Science:** 4 units.

3.33 **Mathematics:** 4 units.

3.34 **Social Studies:** 4 units.

3.35 **Foreign Languages:** at least 2 units of 1 foreign language.

3.36 **Fine Arts:** At least 1 unit in art and 1 unit in music. Instruction in unified humanities courses, if they include content in music and art, may be substituted for these areas.

3.37 **Practical Arts** *(such as business, industrial or vocational courses, homemaking, agriculture)* 4 units

3.38 **Health and Physical Education:** 1 unit.

Exemplary Criteria

(The meeting of Exemplary Criteria is not required for NCA membership. Exemplary Criteria suggest directions or objectives for those schools that meet or exceed the minimum standards.)

—The program of studies exceeds the prescribed minimums.

—Specific programs have been implemented for reducing the student drop-out rate and for assisting withdrawn students to complete their high school education.

—Credit and non-credit educational programs are available to adults.

STANDARD IV

PROFESSIONAL STAFF

The school shall be staffed by teachers who are well qualified in professional and subject matter areas, actively encouraged by the school system to improve their competencies, involved in those areas of decision-making affecting the school program, and teaching under conditions favorable to good morale.

Teachers

4.10 **Degree and Legal Standards:** Teachers shall hold a baccalaureate degree from an institution accredited by a regional accrediting association and shall meet the legal standards for teachers in the state in which they are employed.

Graduates of non-accredited institutions may have their undergraduate work validated by admittance to graduate standing and completion of a minimum of 5 semester hours of credit in a regionally-accredited graduate college.

Credentials from a foreign university shall be accepted only after they have been evaluated by a regionally-accredited baccalaureate degree granting institution, a state department of education, or an appropriate credentials evaluating service and the work is declared the equivalent of similar work in an American institution.

4.11 **Graduate Work from Accredited Institutions:** Wherever in these standards graduate work is required, the work must have been taken in a regionally-accredited institution. Work in a foreign university shall be accepted only if the work is evaluated by the graduate division of a regionally-accredited university, a state department of education, or an appropriate credentials evaluating service and is declared the equivalent of similar graduate work in an American institution.

4.20 **General Preparation:** All teachers shall have at least 40 semester hours of work in general education well distributed over such fields as English, history, social science, mathematics, fine arts, languages, science, philosophy, religion, and psychology.

4.30 **Professional Preparation:** All teachers shall have had student teaching or shall have served an internship as part of an approved teacher education program in a higher education institution accredited by one of the six regional accrediting associations and shall have satisfactorily completed course work in such areas as the learning process, measurement, philosophy, psychology, social foundations, and curriculum totaling at least 18 semester hours. Satisfactory teaching experience may be substituted for the student teaching requirement where state certification permits.

When teaching experience is offered in lieu of student teaching, up to 6 hours of professional preparation shall be waived, in accordance with the practice prevailing in the specific state and provided the teacher is fully certificated by the state.

Teaching Field or Subject

Teachers in the following fields shall have the minimum number of semester hours of credit hereinafter prescribed in order to qualify for teaching assignments in their respective fields.

A teacher may qualify to teach a certain subject by taking and passing a proficiency examination provided an accredited college certifies that the teacher has demonstrated competency equal to that attained by completion of the required preparation.

4.40 **Agriculture:** 24 semester hours in agriculture.

4.41 **Art:** 24 semester hours in art.

4.42 **Business:** 24 semester hours in business with at least 1 college course in each high school subject to which the teacher is assigned.

4.43 **English:** 24 semester hours in English, distributed appropriately among courses in literature or composition. Five semester hours in speech and/or journalism may be counted toward meeting this requirement.

4.44 **Foreign Languages:** 20 semester hours in each foreign language to which a teacher is assigned. One semester hour may be granted for each unit of high school foreign language, but not to exceed 2 hours.

4.45 **Health:** 20 semester hours in health, or a major in a specific teaching field with at least 8 hours in health-related subjects.

4.46 **Home Economics:** 24 semester hours in home economics.

4.47 **Humanities:** 24 semester hours of courses distributed appropriately among subjects included in the course. Because humanities courses often include such areas as art, music, literature, philosophy, and social studies, members of a team

responsible for the course shall be qualified in the areas they are teaching.

4.48 **Industrial Arts:** 20 semester hours in industrial arts including at least 1 course in each subject taught.

Teachers of drafting, general drawing, or mechanical drawing shall be approved under this standard. They may also qualify by combining art and/or industrial arts to total 20 semester hours. Individuals who have qualified in the field need only 5 semester hours in drawing.

4.49 **Interdisciplinary Studies:** 24 semester hours distributed appropriately among the subjects included in the core or block-of-time.

4.50 **Journalism:** 24 semester hours in journalism or a minimum of 5 semester hours in journalism plus sufficient additional work in related fields to total at least 24 semester hours.

4.51 **Mathematics:** 20 semester hours of credit in mathematics. One semester hour may be allowed for each unit of high school mathematics, but not to exceed 2 hours.

4.52 **Music:** 24 semester hours in music, with course work appropriate to the teacher's assignment.

4.53 **Physical Education:** 20 semester hours in physical education.

4.54 **Reading:** 24 semester hours in reading or a minimum of 5 semester hours in reading plus sufficient additional work in English and/or related fields to total at least 24 semester hours.

4.55 **Religious Studies** (Non-doctrinal): A teacher of non-doctrinal religious studies shall meet the NCA requirements for a teacher of English, social studies, or humanities, with at least 6 semester hours in religious studies appropriate to the specific courses being taught by the teacher.

4.56 **Science:** 24 semester hours in science, distributed appropriately in the subjects to which the teacher is assigned. Teachers of highly specialized elective subjects shall have had training and/or experience sufficient to qualify them for assignment to teach such specialized electives, subject to the approval of the State Committee.

4.57 **Social Studies:** 24 semester hours in social studies, distributed appropriately in the subjects to which the teacher is assigned. Teachers of highly specialized elective subjects shall have had training

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and/or experience sufficient to qualify them for assignment to teach such specialized electives, subject to the approval of the State Committee.

4.58 **Speech:** 24 semester hours in speech and dramatic arts or a minimum of 8 semester hours in speech plus sufficient additional work in English to total at least 24 semester hours.

4.59 **All Other Subjects;** Teachers of all other subjects for which NCA requirements have not been established shall be approved by the Commission provided they hold a certificate for the specific field issued by the state in which they are teaching. In the absence of such state certification, approval shall be determined by the judgment of the State Committee.

4.60 **Qualification of teachers in grades 7, 8, and 9 of a secondary school:** Teachers may be qualified by meeting certification and subject hour standards specified in the *Policies and Standards for the Accreditation of Junior High/Middle Schools.*

Staffing and Inservice

4.70 **Student/Professional Staff Ratio:** The ratio of students to teachers and other professional staff members shall not exceed 25 to 1. Only that portion of a staff member's time devoted to duties in the high school shall be counted in determining the student/professional staff ratio. The number of teachers employed in the high school shall be adequate to provide effective instruction, direction of extra-classroom activities, counseling, and other educational services.

4.71 **Teaching Load:** The teaching load shall permit teachers to have time to perform their duties. Except in certain activity-type classes such as typewriting, physical education, and music, the daily student load for each teacher shall not exceed 170 students.

When several staff members participate in a cooperative teaching project, the length of time of each person's participation shall be included when computing the individual teacher's load.

Exceptions to this standard shall be approved by State Committees when evidence is submitted that teachers are regularly provided with clerical and/or paraprofessional help for non-teaching duties.

4.72 **Preparation Period:** Within a six-hour instructional day, each teacher's schedule shall include one period daily or not less than 200 minutes per week for conferences and instructional planning.

The standard does not apply to administrators, counselors, librarians, and to people in certain vocational areas, when approved by the State Committee.

4.73 **Transcripts:** Transcripts of all professional staff members shall be on file in the school or district office.

4.74 **Inservice Education:** A program of inservice education shall be maintained to stimulate continued improvement of teaching and curriculum.

4.75E The professional staff improvement program shall include documented diagnosis of teacher performance and specific processes and resources for improvement.

4.76E Inservice programs shall be developed through needs assessments, faculty involvement, and faculty evaluations of each inservice program.

Special Professional Service Personnel

4.80 **Counselor:** Professional staff members employed as guidance counselors shall have at least 18 semester hours of graduate preparation in guidance and counseling in addition to teaching experience.

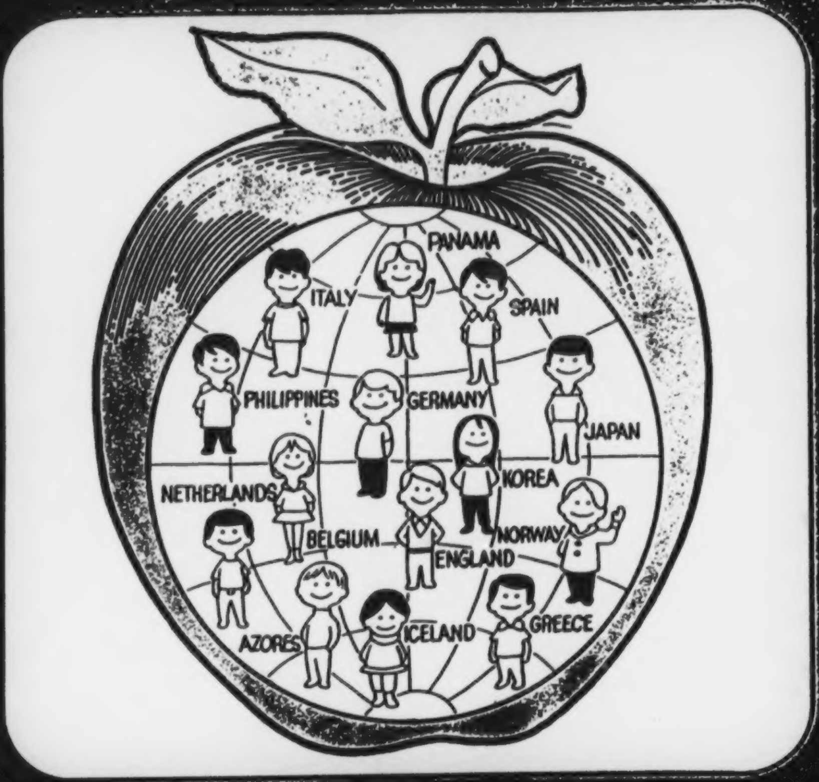
4.81 **Professional Media Personnel:** Librarians shall meet the classroom teacher requirements with reference to degree and professional preparation and also shall have a minimum of 18 semester hours of library science.

Persons employed as audio-visual specialists shall meet the classroom teacher requirements with reference to degree and professional preparation and also shall have at least 12 semester hours of credit in this field.

4.82 **Health Personnel:** Members of the non-instructional professional staff providing health services shall meet the health certification requirements of the state in which the school is located.

Administrative and Supervisory Personnel

The following requirements for specific administrative positions shall not apply to any qualified administrator who held the corresponding position in either an NCA or a non-NCA school prior to September 1, 1969, provided such person met the NCA standards for that position which were



The DoDDS Educator Applicant Evaluation Guide School Year 1988 - 1989

DEPARTMENT OF DEFENSE DEPENDENTS SCHOOLS

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Subject/ Category	Qualifications	Creditable Departments	Creditable Courses	Area of Certification	Selection Factor	Second Category
0212 Journalism	18 semester hours in journalism, or a minimum of 5 semester hours in journalism plus sufficient additional work in related fields such as communications, speech or English to total at least 18 semesters hours.	Journalism, Speech, English, Communications.	Introduction to Journalism; Exposition; Creative Writing; Creative and Editorial Writing; Newspaper Editing.	Grades: 6-12 Title: Journalism	1 year teaching journalism at the middle or secondary level.	Must qualify in one other category.
0312 Journalism	24 semester hours in journalism, or a minimum of 5 semester hours in journalism plus sufficient additional work in related fields such as communications, speech or English to total at least 24 semester hours.					
0220 Social Studies	18 semester hours in the field of social studies, appropriately distributed in the subjects to which assigned. Coursework should include U.S. history, world history, political science, and geography.	Social Science, History, Social Studies, Economics, Government, Geography, Psychology, Sociology, Anthropology, Ethnic Studies.	Age of Renaissance; European History; Political Science; Constitutional Law; American Government; Introduction to Psychology; Cultural Studies; Introduction to Sociology	Grades: 6-12 Title: Social Studies	1 year teaching social studies at the middle or secondary level.	Must qualify in one other category.
0320 Social Studies	24 semester hours in the field of social studies, appropriately distributed in the subjects to which assigned. Coursework should include U.S. history, world history, political science, and geography.					
0230 Science	18 semester hours in the field of science appropriately distributed in the subjects to which assigned. For biology, chemistry, and physics, a minimum of 9 semester hours is required in the subject area.	Chemistry, Biology, Zoology, Botany, Physics, Earth Science, Science, Biological Science, Physical Science, Space Science, Environmental Studies.	Chemistry; Ecology; Embryology; Morphology; Qualitative Analysis; Lab Prep; Genetics; Anatomy; Experimental and Research Techniques; Ecology; Embryology; Entomology; Genetics; Histology; Life Science; Microscopy; Morphology; Ornithology; Parisitology; Physiology; Bacteriology; Anatomy; Geology; Intro. to Chemistry; Quantitative Analysis; Physics; Physical Science; Environmental Science; Earth Science; Space Science.	Grades: 6-12 Title: Science	1 year teaching science at the middle or secondary level.	Cat. 0230. Must qualify in one other category.
0330 Science	24 semester hours in the field of science appropriately distributed in the subjects to which assigned. For biology, chemistry, and physics, a minimum of 9 semester hours is required in the subject area.					Cat. 0330. Second category not required.

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MEMORANDUM FOR All Principals
Grades 7-12 Science Course Teachers

SUBJECT: Definition of Laboratory Science Courses and Science Laboratory Sessions

1. Background: The North Central Association (NCA) and DoDDS discuss laboratory science courses at various locations in their literature.

2. Discussion: Recently there have been discussions regarding how DoDDS-Pacific actually defines laboratory science courses and laboratory sessions.

a. A laboratory science course is defined as a science course in which at least one, one-period laboratory session is conducted each week for the duration of the course.

b. A laboratory session is defined as an entire class period during which every student enrolled in a course and present that day is involved in a "hands-on" science activity or the write-up thereof. Laboratory sessions must be related to the objectives set forth in DS Manual 2200.1, Science Objectives for 1985-1992.

These definitions apply to all science courses listed in my memorandum to you, 17 Apr 87, subject: Course Titles and Student Information Management System (SIMS) Computer Codes.

3. Action: School principals shall monitor science courses in their schools for compliance with this memorandum. Unique problems regarding the offering of science labs should be addressed to this office for assistance. Guidance provided in this memorandum shall remain current until superseded.

SIGNED
JERALD E. BLOOM
Director

cf: District Superintendent

K-6 Learning & Time Allocation Guide

Department of Defense
Dependents Schools (DoDDS)

DSM 2000.8
December 1985

Foreword

This booklet contains the same essential objectives for student learning as those presented by the Department of Defense Dependents Schools (DoDDS) K-6 Learning and Time Allocation Chart (LATAC). Both are intended as aids for teachers in describing, in broad terms, the instructional program to persons unfamiliar with the dependents schools' curriculum. They may also be used to illustrate for parents or community groups the articulation of instructional programs among grade levels and subjects. A more complete listing of objectives for individual curriculum areas is available at each school.

Beth Stephens

Beth Stephens
Director.

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Mathematics

- Organize pictures to demonstrate a sequence of events
- Use manipulatives to demonstrate one-to-one relationships by matching sets
- Use manipulatives to compare quantity terms that include many, some, few, all, none, as many as
- Recognize numerals 0 to 10 and trace numerals 0 through 20
- Manipulate objects to demonstrate one more, one less, and equal
- Identify geometric shapes (circle, square, triangle, rectangle, and oval)
- Identify simple space relationships (inside, outside, on, under, over)
- Sort objects by shape, size, color, and use
- Classify objects by common attributes
- Recognize a clock

(40)

Science

- Identify the five senses
- Identify parts of the body
- Recognize basic animal characteristics
- Recognize basic plant characteristics
- Care for pets and other living things
- Perform simple metric measurement
- Demonstrate a curiosity about the environment and the seasons

1st Grade (Continued)

(190)

Mathematics

- Determine whether addition or subtraction is needed to solve simple story problems
- Read, order, and write numerals 0 through 100
- Estimate whether a group of objects is less than or greater than 18
- Complete a sequence of numbers less than 100
- Add and subtract numbers 0 through 10 using the number line and other manipulative aids
- Compute addition and subtraction facts through 10 using horizontal and vertical notation
- Identify and draw geometric shapes: circle, square, triangle, rectangle, oval, and diamond
- Compare and arrange objects by size or weight
- Use available standard or non-standard measurement units to determine length and weight
- Observe, record, and graph information with teacher help

(100)

Science

- Use the senses to identify objects
- Distinguish living from non-living things
- Identify physical similarities and differences in living things
- Classify objects
- Identify the similarities and differences of liquids, solids, and gases
- Describe pleasant and unpleasant conditions in the personal environment
- Describe daily and seasonal changes in the community
- Identify sources of energy for living things

(190)

Mathematics

- Establish sequence for problem solving such as: define the problem, formulate a plan, act on the plan, and evaluate the outcome
- Solve word problems in addition and subtraction using two-digit numbers
- Understand place value to 1,000
- Estimate the length of line segments
- Compute addition and subtraction facts through 18 using horizontal and vertical notation
- Demonstrate that addition and subtraction are opposite operations
- Classify plane geometric figures by shape, size, and color
- Make change from $.25 with pennies, nickels, and dimes
- Tell time in intervals of 5 minutes
- Record outcomes from simple observations and graph the data

(100)

Science

- Describe and demonstrate the characteristics of magnets
- Identify environmental conditions appropriate for plants and animals
- Understand basic environmental needs of people
- Inventory use of energy in the home
- Make predictions based on measurements
- Know that forces are required for the movement of objects
- Be able to describe the location of an object within its immediate environment

(220)

Mathematics

- Solve word problems using diagrams and pictures
- Formulate word problems using appropriate computational skills
- Identify place value to 10,000
- Recognize, read, and write 1/4, 1/5, 1/6, 1/7, and 1/8
- Estimate the cost of 2 items less than $1.00 in value
- Add and subtract three-digit numbers with regrouping
- Use standard measurement units to measure temperature, length, weight, and volume
- Make change from $1.00
- Use manipulatives to show the perimeter and area of squares and rectangles
- Read and interpret line graphs

(140)

Science

- Describe the weathering and erosion process
- Identify basic components of matter
- Identify some characteristics of living things that are inherited
- Place elements of a food chain in sequence
- Relate cause-and-effect relationships within selected processes
- Identify appropriate methods of measurement for a given task
- Distinguish between an observation and an inference drawn from that observation
- Describe the contributions of selected scientists to mankind

(240)

Mathematics

- Solve word problems by dividing into smaller problems
- Read and write compact and expanded notation to 10,000
- Estimate the amount of money needed to purchase several items
- Compute basic multiplication facts through 9
- Divide by one digit with or without remainders
- Identify relationships between units of measure (length, weight, volume, time, money)
- Make change in local or U.S. currency to $5.00
- Identify the radius, diameter, and circumference of a circle
- Identify points, line segments, parallel lines, acute and obtuse angles
- Interpret bar, line, and circle graphs

(150)

Science

- Use appropriate tools to provide data in simple experiments
- Make inferences or predictions from a set of observations
- Describe the earth's atmosphere and how changes in it affect the weather
- Interpret simple maps, graphs, and charts
- Determine how pollution affects the quality of life
- Value the need for conservation of resources
- Formulate a question that can be answered by scientific activity
- Discuss similarities and differences among related individuals

(240)

Mathematics

- Solve a problem by comparing it to similar problems solved previously
- Determine the prime factorization of numbers
- Use divisibility rules for 2, 5, and 10
- Estimate the distance traveled in a certain time
- Find the greatest common factor and the least common multiple of pairs of numbers
- Add and subtract common fractions with like denominators
- Identify and apply appropriate units of measure of time, temperature, length, weight, and volume
- Measure the area of plane figures with a grid
- Recognize and draw intersecting and perpendicular lines
- Compute averages from collected data

(160)

Science

- Distinguish climate from weather
- Explain energy flows in various cycles
- Describe how plant and animal cells, tissues, and systems function to maintain life
- Describe the uses and advantages of simple machines
- Explain how gravitational forces affect our lives
- Explain the results of simple light and sound experiments
- Describe an atomic model
- Develop a plan for answering a scientific question
- List benefits and concerns which have resulted from scientific/technological innovations

(240)

Mathematics

- Solve multistep word problems using a logical process
- Formulate word problems related to an everyday situation
- Identify reciprocals of fractions, whole numbers, and mixed numbers
- Compare mixed numbers or mixed decimals using symbols
- Estimate the product and quotient of fractional and decimal numbers
- Perform the four basic operations with decimals and whole numbers
- Add and subtract fractions and mixed numbers with like and unlike denominators
- Use a scale in map reading
- Find the area of triangles, parallelograms, trapezoids, and circles using formulas
- Interpret charts and tables to make inferences

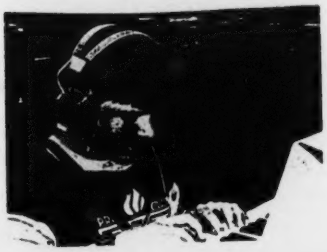
(160)

Science

- Use scientific theories to explain geologic history
- Distinguish between renewable and non-renewable resources
- Give examples of fundamental kinds of forces
- Give evidence for the particle nature of matter
- Explain energy transformations in matter
- Describe personal activities to reduce pollution
- Distinguish between scientific and non-scientific explanations of phenomena

NCA

"The purpose of the Association shall be the development and maintenance of high standards of excellence for universities, colleges, and schools, the continued improvement of the educational program and the effectiveness of instruction on school and college levels through a scientific and professional approach to the solution of educational problems, the establishment of coooperative relationships between the schools and colleges and universities within the territory of the Association, and the maintenance of effective working relationships with other educational organizations and accrediting agencies." (Articles of Incorporation of the North Central Association).



Standards for Middle Level Schools

(Junior High Schools and Middle Schools)

Commission on Schools
North Central Association
Post Office Box 18
Boulder, Colorado 80306

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6.03 Principal. The principal **shall** hold a master's degree from a regionally-accredited college or university and have at least 20 semester hours of graduate work in professional education with major emphasis on administration, curriculum, supervision, and related areas. The principal **shall** have a minimum of two years of teaching experience.

The principal's preparation should include emphasis on the middle level school and on the psychology of pre-adolescence and early adolescence. The principal should have teaching experience in a middle level school.

6.04 Assistant Principal. The assistant principal **shall** have at least the master's degree from a regionally accredited college or university, with preparation in administration, curriculum, supervision, and related fields. The assistant principal **shall** have a minimum of two years of teaching experience.

The assistant principal's preparation should include emphasis on the middle level school and on the psychology of pre-adolescence and early adolescence. The assistant principal should have teaching experience in a middle level school.

6.05 Other administrative, supervisory, and consultant personnel **shall** hold a baccalaureate degree with special training in the area of their assignment and should have teaching experience in a middle level school.

6.06 All professional personnel **shall** hold a baccalaureate degree from a regionally-accredited institution, evidence adequate professional education preparation, meet the regular certification standards of the state, and **shall** be assigned to teach in areas for which they are prepared. Graduates of non-accredited institutions may have their undergraduate work validated by admittance to graduate standing and completion of a minimum of 5 semester hours of credit in a regionally-accredited graduate college. Credentials from a foreign university **shall** be accepted only after they have been evaluated by a regionally-accredited baccalaureate granting institution, a state department of education, or an appropriate credentials evaluating service and the work is declared the equivalent of similar work taken in an American institution.

The minimum teacher preparation **shall** be:

a. Teachers with preparation and certification for middle level schools may teach all subjects and levels for which their certificates are endorsed, subject to the approval of the State Committee.

b. Teachers with secondary certification **shall** have 18 semester hours (16 semester hours in mathematics) in the field, appropriately distributed subject to the approval of the State Committee.

c. Teachers with elementary certification **shall** have 12 semester hours in the field, appropriately distributed and subject to the approval of the State Committee.

d. Teachers with elementary certification may teach all subjects in a self-contained classroom.

e. Teachers of combined subject classes **shall** have at least 24 semester hours of appropriately distributed credit in the included subject fields.

f. Teachers of special education, exploratory subjects, work experience, prevocational/vocational, and other subjects for which NCA requirements have not been established **shall** be approved by the Commission if they hold a valid certificate for the respective field issued by the state in which they are teaching. In the absence of such state certification, approval is left to the judgment of the State Committee.

g. Guidance counselors or directors **shall** have at least 15 semester hours of graduate preparation in guidance and counseling.

h. The media specialist **shall** have at least 15 semester hours in school library and audio-visual services, **shall** have a broad background in education, and **shall** be certified as a teacher. The person shall meet state standards of preparation.

6.07 Wherever in these standards graduate work is required, the work **shall** have been taken in a regionally-accredited institution. Work in a foreign university **shall** be accepted only if the work is evaluated by the graduate division of a regionally-accredited university, a state department of education, or an appropriate credentials evaluating service and is declared the equivalent of similar work in an American institution.

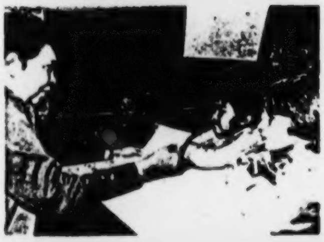
6.08 The professional staff **shall** plan and participate in an inservice training program that provides understandings of the middle level school and the needs of the pre- and early adolescent.

6.09 A minimum of 200 minutes of scheduled time **shall** be provided each week for each teacher for individual planning and/or preparation and consultation.

NCA

"The purpose of the Association shall be the development and maintenance of high standards of excellence for universities, colleges, and schools, the continued improvement of the educational program and the effectiveness of instruction on school and college levels through a scientific and professional approach to the solution of educational problems, the establishment of coooperative relationships between the schools and colleges and universities within the territory of the Association, and the maintenance of effective working relationships with other educational organizations and accrediting agencies." (Articles of Incorporation of the North Central Association).

Standards for Elementary Schools



Commission on Schools
North Central Association
Post Office Box 18
Boulder, Colorado 80306

Cooperative Action for Quality Education

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lated fields. The superintendent shall have had a minimum of 4 years of professional experience, at least 2 years of which shall have been classroom teaching experience.

Note

This standard shall not apply to superintendents who held the position before September 1969 and who met the previous NCA standard of the master's degree, including twenty hours appropriately distributed in administrative courses, and four years of professional experience. Wherever permissible under state certification laws or regulations, any person newly employed as a principal or superintendent in an NCA school is granted up to two years to complete the full graduate-hour requirement. However, the person must complete the necessary graduate hours by the end of the two-year grace period or the school shall be warned unless documentation of reasonable progress being made in meeting the standard is accepted by the State Committee.

At the 1985 business meeting of the Commission, the Commission approved the following revision of the last sentence of this standard as follows: "The superintendent shall have a minimum of four years of professional experience, at least two years of which shall have been classroom teaching." The revision is effective 1 September 1985. The requirement shall not apply to any superintendent holding the position during the 1984-85 or 1985-86 school year nor to an educator formerly holding the position of superintendent in an NCA school or district.

5.05 The assistant superintendent (or director) in charge of elementary education shall have earned at least 45 semester hours of graduate credit, inclusive of the master's degree, with a major emphasis in the fields of educational administration, educational supervision, and elementary education, and shall have had two years of classroom teaching experience.

5.06 The principal shall hold a master's degree with a minimum of 20 semester hours of graduate work in professional education, with a major concentration in educational administration, curriculum development, educational supervision, educational philosophy, and child development. This preparation shall include emphasis on the elementary school. The principal shall have had a minimum of two years of elementary classroom teaching experience.

5.07 *Assistant Principal.* The assistant principal shall hold a regular elementary teaching certificate and shall have a minium of twenty semester graduate hours in elementary school administration and related fields. The assistant principal shall have had a minimum of two years of elementary classroom teaching experience.

5.08 *Support Area Supervisors, Consultants, Coordinators.* Elementary school support area supervisors, consultants, and coordinators shall have earned a master's degree with a concentration of graduate study in their particular area of work.

5.09 *Health Personnel.* Members of the non-instructional professional staff providing health services shall meet the requirements of the state in which the school is located.

5.10 *Paraprofessionals, Teacher Aides, and Interns.* Paraprofessionals, teacher aides, and interns shall meet state qualifications for their respective positions. They shall be used only in those situations permitted by state regulations.

Note

A variety of staffing patterns is to be encouraged, subject to the approval of the NCA State Committee.

5.11 *Pupil/Professional Staff Ratio.* The ratio of pupils to teachers and other professional staff members shall not exceed 20 to 1. In computing the ratio, the school may include the instructional responsibilities of all professional staff assigned to the building plus the time devoted to instruction by other professional personnel.

5.12a *Pupil/Classroom Teacher Ratio.* The enrollment in a kindergarten class shall not exceed 25. An additional five children may be added to a class if a teacher aide is provided for the entire session.

b The enrollment in a pre-kindergarten class for children two years old or less shall not exceed 6.

c The enrollment in pre-kindergarten classes for children from two to four years of age shall not exceed 18.

d A full-time aide shall be present in all prekindergarten classes whenever students are present.

5.20 *Differentiated Staffing.* If the staff is differentiated, the school may compute three full-time paraprofessionals, lay aides, or interns as the full-time equivalency of one full-time professional staff person. Such paraprofessionals shall not account for more than ten percent of the professional staff members used to compute the pupil/professional staff ratio.

5.21 *Planning/Conference Time.* Within the teacher's workday, each teacher shall have a minimum of two hundred minutes each week scheduled for conferences, instructional planning, and preparation. Within the teacher's workday, each full-time prekindergarten teacher shall have a minimum of three hundred minutes per week scheduled for parent education, conferences, instructional planning, and preparation. The principle of full-time equivalency shall apply.

5.22 *Preparation Records.* Official transcripts for all professional staff members shall be on file in the district office or the school office.

5.23 *Staff Assignments.* Discriminatory practices based on race, religion, ethnic background, sex, or age shall not be used in the placement, assignment, or retention of school personnel except that church-affiliated schools may prefer members of that faith.

Staff Development Programs

5.31E Inservice programs shall be developed through needs assessments, faculty involvement, and faculty evaluations of each inservice program.

5.32E The professional staff development program shall provide diagnoses of performance strengths and limitations and shall specify processes and resources available for enhancing performance.

5.33 The school shall provide incentives for personnel to obtain advanced professional preparation.

5.34 Training commensurate with their assignments shall be provided for all paraprofessionals.

Standards on Organization

5.40 The principal shall have the responsibility and the authority to initiate those changes which will adapt the school program to the needs of the students.

5.41 The principal shall have the responsibility and the authority for the administration of the non-instructional programs in the school.

5.42 The school shall have a principal who shall serve at least half-time. If the enrollment of the school exceeds 250, a full-time principal shall be employed.

5.43 If a principal administers more than one school, the combined enrollment of those schools shall not exceed 450 students.

5.44 In order to permit the principal to have sufficient time to engage in improvement of instruction in the school having an enrollment of 600 or more students, at least a half-time assistant principal or the equivalence in professional (certificated) personnel shall be provided. If the enrollment exceeds 800, at least one full-time assistant principal or the equivalency shall be provided.

Summary of Required Administrative Staffing

Enrollment	Administrative Staffing Required
Fewer than 250	At least a half-time principal.
250 to 599	A full-time principal.
600 to 799	The principal plus at least a half-time assistant principal or the equivalency.
800 or more	The principal plus at least one full-time assistant principal or the equivalency.

5.45 At least one full-time secretary or the equivalency shall be provided the school. If the school enrollment exceeds 600, at least a half-time office clerk (or the equivalency) shall be provided in addition to the secretary. If the enrollment exceeds 800, at least a full-time office clerk (or the equivalency) shall be provided in addition to the secretary.

5.46 The principal shall be involved in the selection, assessment, evaluation, retention, and promotion of all personnel assigned to the school.

5.47 While working with faculty, staff, or students in the school, central office and other supplementary personnel shall coordinate their activities through the principal.

5.48 Administrative procedures shall be developed by democratic processes which utilize the abilities and contributions of staff members.

Auxiliary Services

5.49 The school shall provide for guidance services. Such services may be provided by a guidance counselor or other personnel specially trained in the area of guidance.

5.50 The school shall provide the necessary personnel, facilities, clerical help, and materials for effective diagnostic and prescriptive services.

5.51 If the school maintains a food service program, adequate and trained cafeteria personnel shall be available in accordance with local, state, and federal regulations.

5.52 The principal shall have the responsibility and the authority to initiate those changes which will adapt the school program to the needs of its students.

5.53 The principal shall have the responsibility and the authority for the administration of the non-instructional programs in the school.

5.54 Records and reports needed for effective planning, operation, evaluation, and reporting shall be kept relative to the various components of the educational program such as (1) pupil personnel, (2) staff, (3) instructional supplies and equipment, (4) curriculum, (5) pupil activities, (6) media services, (7) guidance, (8) school plant, (9) administrative operations, (10) health services.

Staffing for the Instructional Materials Program

5.56 Responsibility for the development and the operation of the media program shall be placed under the direction of a qualified (professional) media specialist.

5.57 The school shall provide for the staffing of the instructional/learning/media program through one of the following arrangements:

	Option A	Option B*		
Enrollment	**Certificated Media Specialist**	**Certificated Media Specialist**	**PLUS**	**Trained Employed Aide**
Fewer than 400 students	1/2 time specialist	1/5 time specialist	+	1 full-time aide
400 to 999 students	1 full-time specialist	1/2 time specialist	+	1 full-time aide
1,000 or more students	1 full-time specialist plus 1 full-time aide			

If Option B is used, the paraprofessional must have training in library cataloging and/or library administration and organization so as to be able to assist with cataloging, library records, circulation, and helping students and teachers in the collection of materials needed for classroom activities. The paraprofessional may be trained by a certificated library/media specialist or through appropriate college or university courses.

5.58 In order to permit the media specialist to provide essential professional media services to students and

DEPARTMENT OF DEFENSE
DEPENDENTS SCHOOLS
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PACIFIC EDUCATION

DSPA REGULATION 2300.1
May 31, 1988

DEPARTMENT OF DEFENSE DEPENDENTS SCHOOLS
PACIFIC REGION
SCHOOL-WIDE ACTION PLAN (SWAP) POLICY

A. PURPOSE

This regulation establishes policy and assigns responsibilities for the implementation of the School-Wide Action Plan (SWAP). The goal of the SWAP is to improve student achievement through the analysis of system-wide test results. This regulation also delineates a Pacific Region SWAP review policy.

B. CANCELLATION

DS regulation 2300.1, School-Wide Action Plan (SWAP) Policy, September 17, 1985, is hereby superseded and canceled.

C. APPLICABILITY

The provisions of this regulation apply to DoDDS-Pacific personnel.

D. POLICY

1. A School-Wide Action Plan will be developed annually at each school to improve student achievement utilizing system-wide test results.

2. A School-Wide Action Plan committee will be established at each school. This committee will provide overall guidance for the development and implementation of the SWAP.

3. The development of the SWAP will involve all faculty members. The implementation of the SWAP will involve as many faculty members as appropriate. Community involvement should be encouraged.

4. Implementation of the SWAP will include the following:

   a. analyzing school-level test results and identifying instructional program needs,
   b. developing a written plan for improvement of student achievement,
   c. conducting an on-going review, and
   d. reviewing and responding to recommendations for program improvements.

E. TIME LINES

1. Each school will establish a SWAP committee prior to the date of fall achievement testing.

2. By the end of the first semester, each school will submit its SWAP to the superintendent for review and evaluation.

3. The superintendent will review, evaluate, and provide a written response for each SWAP by the end of the 3rd quarter.

F. RESPONSIBILITIES

1. REGIONAL DIRECTOR. The Regional Director will assure that the guidance outlined in this regulation is implemented and will provide copies of each school's SWAP to the Director, Office of Dependents Schools.

2. DISTRICT SUPERINTENDENT. The District Superintendent will

a) review and evaluate each school's SWAP,
b) send a written response to the school principal,
c) send a copy of each written response to the Regional Director along with two copies of each school's SWAP, and
d) send a year-end SWAP summary report to the Regional Director.

3. EDUCATION DIVISION. The Education Division will be a resource for the process of the development, implementation, and evaluation of the SWAP.

4. SCHOOL PRINCIPAL. The school principal will

a) establish and serve on the SWAP committee,
b) be responsible for the development and implementation of a comprehensive SWAP and its use by teachers,
c) submit one copy of the SWAP to the District Superintendent,
d) insure the SWAP is presented each year to the School Advisory Committee, and
e) prepare a year-end SWAP evaluation report and forward a copy to the District Superintendent.

5. The document control numbers for this report are as follows: DSRCS 2002, DSRCS 2704, and DSRCS 2703.

G. EFFECTIVE DATE AND IMPLEMENTATION

This regulation is effective upon receipt commencing with school year 1988-89.

Jerald E. Bloom
JERALD E. BLOOM
Director

Enclosures 1. SWAP Time Line
2. SWAP Implementing Instructions
Distribution X

STATEMENT OF PHILOSOPHY

The development of School-Wide Action Plans represents a commitment by educators to improve student achievement through the analysis of system-wide test results.

The School-Wide Action Plan

1. Provides a framework for on-going improvement and evaluation of instructional programs.

2. Increases articulation within each school and within a school complex.

3. Utilizes data related to historic patterns of student achievement.

4. Identifies discrepancies between actual and expected levels of student achievement.

Encl 1

DODDS-PACIFIC
SCHOOL-WIDE ACTION PLAN TIME LINE

The following time line has been developed to assist and guide in the ongoing School-Wide Action Plan process:

		Date of Accomplishment/Receipt
AUGUST	SWAP orientation by principal to staff	
SEPTEMBER	SWAP committee established	
	Faculty meeting on testing procedures	
	Fall testing program administered	
	Review SWAP from previous school year	
SEPTEMBER/NOVEMBER	Develop and implement SWAP section A	
NOVEMBER	Fall testing results received	
	Develop and implement SWAP section B	
NOVEMBER/JUNE	Principal's presentation of SWAP to SAC	
	Conduct on-going reviews of the SWAP	
JANUARY	Finalized copy of the SWAP sent to the District Superintendent	
APRIL	District Superintendent provides a written response for each SWAP	
	Faculty meeting on testing procedures	
	Spring testing program administered	
MAY/JUNE	Spring testing results received	
	Faculty reviews test results and evaluates SWAP	
	Principal sends year-end evaluation report of the SWAP to the District Superintendent	
	District Superintendent sends summary report of the District's SWAP's to the Regional Director	

DoDDS-PACIFIC
SCHOOL-WIDE ACTION PLAN
IMPLEMENTING INSTRUCTIONS

The following guidelines have been established to assist in the implementation of the SWAP. Release time of two half-days is approved for developing, implementing, and reviewing the SWAP.

AUGUST

The principal will brief the staff on the philosophy and basic format of the School-Wide Action Plan.

SEPTEMBER

1. The principal will establish a SWAP committee to determine operating procedures and policies. Membership will include

    a. Principal
    b. SWAP Chairperson
    c. Department or Grade Level Chairpersons
    d. Other members as appropriate.

2. This committee will meet to review the spring test results and to develop a presentation for the staff.

3. A faculty meeting will be held to discuss test administration and test-taking strategies.

4. Administer fall testing program.

SEPTEMBER/NOVEMBER

The committee will make a presentation to all staff members regarding the SWAP implementation process. The staff will then determine the content areas to be addressed in the School-Wide Action Plan using the Evaluator's Summary and the Objective Mastery Report from either the spring or fall CTBS test results. (Refer to pgs. 5-28 and other appropriate areas in the CTBS Class Management Guide.)

1. Develop and implement SWAP Section A.

Section A:

a. One Section A form will be used for each content area selected.

b. It is recommended that each school target two or three areas for improvement. These may come from different content areas or entirely from one content area, for example: several content areas such as Reading Comprehension, Science, Math Concepts and Applications, OR one content area - Reading, with category objectives such as vowels, consonants, and main idea.

c. Cite the source used to compare scores. See the examples listed in Section A.

d. Complete the section of the form identifying grade level(s) and testing year with appropriate test scores.

e. Explain why this particular area was selected in the Rationale section.

f. The Enrichment/Remedial Activities listing includes teacher-made and commercially prepared materials. Textbook page numbers need not be listed as it is assumed that these lessons will be taught during the course of the school year.

g. Entire faculty participation is encouraged, as appropriate.

NOVEMBER

1. Develop and implement SWAP, Section B

Section B, Form 1

a. The faculty reviews the Objective Mastery Reports and lists by number and item description all items below the national mastery level. The fall National and School/Class Percent of Mastery scores are listed in the appropriate columns. Elementary teachers list scores by classroom. Secondary teachers list scores by classroom and subject area or grade level and subject area.

b. Any item at or above the national percent of mastery that is being considered for enrichment will also be listed. It is recommended that four to six items will be selected for enrichment/remediation. Designate these items by placing an asterisk before the test objective.

c. After the spring testing results are received, the appropriate scores will be recorded in the spring columns of the form. The data from this form will be used to complete the Year-End Evaluation Report.

Section B, Form 2

a. An individual plan is developed for each test objective selected from Section B, Form 1 (Comparative Summary Report). The objective number and objective description is listed in the appropriate column. The scores from the Objective Mastery Report are listed in the appropriate columns and the differences computed.

b. The teacher(s) state(s) the rationale for choosing the objective, and the enrichment/remedial activities are listed.

c. Textbook page activities need not be listed as it is assumed they will be taught during the course of the school year.

NOVEMBER/JUNE

1. It is expected that each faculty member will periodically review and assess progress in the accomplishment of their plans (Section A and B). The principal is responsible for monitoring these reviews.

2. Principals will present the School-Wide Action Plan to the School Advisory Committee.

JANUARY

1. The principal will submit the finalized copy of the SWAP to the District Superintendent by the end of the first semester.

The finalized copy will include

a. a narrative describing the process used to develop and implement the SWAP, including how the community was involved in the process,

b. the SWAP Time Line,

c. SWAP Section A (School Reports),

d. SWAP Section B, Form 1 (Comparative Summaries), and

e. SWAP Section B, Form 2 (Individual Reports).

APRIL

1. Teachers will review test-taking procedures and strategies with their students.

2. Principals are encouraged to seek parental support in their community newsletters by emphasizing the role and significance of test information for their individual students.

3. Spring testing program administered.

MAY/JUNE

1. Using the spring test results, the faculty will update the Section A forms and Section B, Form 1. This information will be used by the SWAP Committee to formulate the Year-End SWAP Evaluation Report.

2. Year-End SWAP Evaluation Report

The Year-End Report will include

a. A narrative describing the results of the SWAP, to include areas of growth and deficiencies and areas to be considered next school year,

b. The SWAP Time Line,

c. The SWAP Section A form(s), with Spring results entered, and

d. The Comparative Summary (Section B, Form 1) for each classroom or discipline area addressed.

e. The Year-End Evaluation Report will be signed by all available SWAP committee members.

Section B
Form 2

DoDDS-PACIFIC
SCHOOL-WIDE ACTION PLAN
INDIVIDUAL REPORT

Grade __________ Teacher(s) ________________ Subject Area ________________

Test Objective Number	Description of Objective	Comparative Data from Objective Mastery Report		
		National % Mastery	School/Class % Mastery	+/-

Rationale for choosing objective:

Enrichment/Remedial Activities: Date Completed:

Section B
Form 1

DoDDS-PACIFIC
SCHOOL-WIDE ACTION PLAN
COMPARATIVE SUMMARY REPORT

Grade ____________ Teacher(s) ____________________ Subject area ______________

		FALL			SPRING		
Test Obj. No.	Item Description	National % Mastery	School/ class % Mastery	+/-	National % Mastery	School class % Mastery	+/-

List all objectives below national mastery level and all others you are addressing. Place an asterisk (*) in front of the test objectives selected for enrichment/remediation.

DoDDS-PACIFIC
SCHOOL-WIDE ACTION PLAN
SCHOOL REPORT

Content Area

____

Scores used
for comparison ______________________
(e.g.: Median Grade Equivalent, Median National Percentile, National Percent of Mastery, or other)

Rationale for choosing content area:

	Spring 19	Fall 19	Spring 19
Grade ______	________	________	________
Grade ______	________	________	________
Grade ______	________	________	________
Grade ______	________	________	________
Grade ______	________	________	________
Grade ______	________	________	________

Enrichment/Remedial Activities:
(attach additional sheets as appropriate)